

DOCUMENT RESUME

ED 212 102

EC 141 505

AUTHOR Goldberg, Miriam L.
TITLE Issues in the Education of Gifted and Talented Children in Australia and the United States.
INSTITUTION Australian Schools Commission, Canberra.
REPORT NO ISBN-642-89591
PUB DATE Jun 81
NOTE 76p.; For related document, see EC 141 506.

EDRS PRICE MF01/PC04 Plus Postage.
DESCRIPTORS *Comparative Education; Definitions; *Delivery Systems; *Educational Trends; Elementary Secondary Education; Foreign Countries; *Gifted; *Program Evaluation; Research; State of the Art Reviews; Student Evaluation; Talent; *Talent Identification

IDENTIFIERS *Australia

ABSTRACT

The author examines the status and recent changes in the education of gifted and talented students in Australia and the United States. Seven issues are addressed (sample subtopics in parentheses): ambivalent attitudes toward egalitarianism and excellence (equality of opportunity vs. equality of outcome); definitions and assessment of gifted/talented students (determining talent areas); criteria for judging the appropriateness of special programs for gifted/talented students (match between the program and the characteristics of talent areas); organizational alternatives for content development and delivery (learning settings); staffing issues (teacher preparation and certification); and support for research on the gifted/talented. The desirability of a cross national study is emphasized. (CL)

* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *

ED212102

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)



This document has been reproduced as
received from the person or organization
originating it.
Minor changes have been made to improve
reproduction quality.

- Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

Issues in the Education of Gifted and Talented Children in Australia and the United States

Miriam L. Goldberg

"PERMISSION TO REPRODUCE THIS
MATERIAL HAS BEEN GRANTED BY

Jan Hosack

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)."

Commonwealth Schools Commission

EC141505

ISSUES IN THE EDUCATION OF GIFTED AND TALENTED
CHILDREN IN AUSTRALIA AND THE UNITED STATES

Miriam L. Goldberg
Professor of Psychology and Education
Teachers College, Columbia University
New York, New York

Schools Commission
Canberra
June 1981

EC141 505

ISBN 642 89591

Printed by the Commonwealth Government Printer, Canberra, 1981.

FOREWORD

Professor Miriam Goldberg's first visit to Australia, in March 1978, was sponsored by the Australia-United States Education Policy Project. She travelled to most States and had discussions with those involved and interested in education of gifted children. She also had the opportunity to inspect a number of schools and institutions where special programs were being conducted.

Following her first visit Professor Goldberg prepared a paper in which she outlined issues in the education of gifted and talented children in the United States and Australian contexts. The Commission believed that the paper was of value and in 1980 invited her to Australia again to review changes that had occurred since 1978, and to write a new paper setting out her interpretation of these developments. This publication is the result.

The Commission believes that this paper opens up many issues and will be particularly valuable to those who are actively involved in the education of gifted and talented children as well as of general interest to educationists.

The Commission is publishing Professor Goldberg's paper as part of its continuing interest in the education of gifted and talented children. It has established a consultative group, and plans to conduct a national seminar in late 1981 to consider ways of promoting systematic program development in the areas of teacher training, support services, curriculum development and research.

P.D. Tannock

CONTENTS

Introduction	1
The Current Status of Education for the Gifted/ Talented in Australia and the United States	3
Egalitarianism and Excellence - Ambivalent Attitudes	8
Defining and Assessing Giftedness/Talent : Determination of Fields, Standards and Criteria	15
Criteria for Judging the Effectiveness of Special Programs for the Gifted/Talented	32
Organisational Alternatives for Content Development and Delivery	45
Staffing Programs for the Gifted/Talented	49
Summary of Issues and Related Questions : Some Possible Items for an Agenda of Cross-national Research	55
Bibliography	64

INTRODUCTION

The impetus for a proposal to explore possibilities for United States - Australian cross-national policy research relating to the education of gifted/talented students came from the inclusion of this area of concern among the functions to which the Schools Commission Act of 1973 "enjoins the Commission to have particular regard ..." (Tannock, 1977, p.12). The relevant section is phrased as follows:

"The desirability of providing special educational opportunities for students who have demonstrated their ability in a particular field of studies, including scientific, literary, artistic or musical studies..." (Tannock, 1977, p.13, par. g)

In the 1976 proposal for a United States - Australian Education Policy Conference, "making provisions for the special needs of talented children; tailoring the education system more closely to the needs of talented children; ..." is referred to as an issue of "considerable current concern in both countries" (Tannock, 1977, p.62). Educational concern for the talented was placed in the context of recognising and tailoring educational programs to the needs of various special populations (such as women and the handicapped) in the light of changing labour market demands and the availability of resources.

The education of gifted/talented children has long been of concern to American educators. The first recorded systematic approach to making special educational adaptations for 'bright' pupils goes back to 1868-69 when Dr. William T. Harris, superintendent of schools of St. Louis, Missouri, organised a system of rapid promotions in the elementary grades. His intent was to provide faster learners with more challenging work and prevent them from being bored and developing lazy work habits. By the middle of the 1920's, the National Society for the Study of Education - a good barometer of national educational concerns - had published two yearbooks on the subject of the gifted: the 19th Yearbook, entitled *Classroom problems in the education of the gifted* (Henry, 1920) and the 23rd Yearbook, which approached the issue in broader perspective, entitled *The education of the gifted* (Whipple, 1924). The latter volume included an annotated bibliography of 453 entries dealing with various aspects of the nature and education of gifted pupils.

Although over thirty years went by before the NSSE again published a yearbook in this area, entitled *The education of the gifted* (Henry, 1958), schools across the country initiated, abandoned and reinitiated a great variety of programs during the intervening decades. The decade following the launching of the Soviet Sputnik saw a great expansion of research and program development and the appropriation of considerable federal monies to further this work. By the mid 1960s,

Goldberg (1965) was able to list some 250 books, pamphlets and bulletins relating to the nature and education of the gifted, and to review 176 articles and papers on the subject, most of which appeared between 1957 and 1964. This year the NSSE has, once again, published a yearbook in this area, entitled *The gifted and the talented : their education and development* (Passow, 1979).

It is thus clear that concern for the education of the gifted has threaded its way through American education for almost a century. But throughout this period there were continuing and sometimes acrimonious debates about modes of organisation, about funding, about whom to include and whom to exclude from a definition of giftedness, and about the political and moral issues inherent in differential programs for the gifted. Sometimes the proponents were in the ascendancy, sometimes the opponents.

Thus, both Australia and the United States have the education of the gifted/talented on their general educational agendas, and policy consideration in the two countries could be significantly informed by a collaborative examination of the persistent and emerging issues which characterise the evolution and current status of the field in Australia and in the United States.

SPECIFYING SOME MAJOR ISSUES

After summarising for a group of Australian educational leaders from several of the States and from the Australian Capital Territory my impressions of what I had seen and heard during my first visit to Australia in March 1978, I outlined a series of issues which needed to be seriously considered if education of the gifted in Australia is to develop effectively. In fact, failure to analyse and, as far as possible, resolve these issues would continue to impede serious, widespread efforts in this area. While most of the issues dealt with in this paper were identified in the Australian context, they clearly have their counterparts in the United States. Similarly, additional problems, derived from the American context which were not encountered in Australia, may become salient in the Australian context as educational efforts on behalf of the gifted/talented become more widespread.

The following issues will be examined:

- (a) egalitarianism and excellence - ambivalent attitudes;
- (b) defining and assessing giftedness/talent;
- (c) criteria for judging the appropriateness of special programs for the gifted/talented;
- (d) organisational alternative for content development and delivery; and
- (e) staffing programs for the gifted/talented.

From the above list it is quite apparent that the several issues are not mutually exclusive nor are they of the same order of magnitude or of the same degree of persistence. For example, issues which derive from conflicting interpretations of basic social values and commitments are not only more difficult to resolve than, for example, issues related to specific assessment procedures, but the direction in which the basic value issues are resolved has a crucial bearing on the way in which organisational, curricular and assessment issues are addressed.

Following a brief survey of the current status of educational and research efforts relating to the talented in the two countries, each of the above issues will be discussed in the light of the limited insights gleaned from observations and conversations on my two visits to Australia and my reading of the evidence on their status in the United States. A summary in the form of possible items for an agenda for cross-national research will complete the paper.

THE CURRENT STATUS OF EDUCATION FOR THE GIFTED/TALENTED IN AUSTRALIA AND THE UNITED STATES

AUSTRALIA

While special provisions for gifted/talented pupils have existed in individual Australian states either continuously or sporadically since the early 1930s, it was not until the Schools Commission Act of 1973 "enjoyn(ed) the Commission" to consider the importance of providing for the education of students with demonstrated abilities in various fields, that a general policy statement gave official recognition to the importance of this educational area.

But by March 1978, in actual practice, this educational area seemed to have relatively low priority, as evidenced by the extent of special programs across the country and by the generally modest concern and interest expressed by educational leaders in several states and the Australian Capital Territory. There were individuals and small organised groups in New South Wales, South Australia, Victoria and Western Australia actively involved in stimulating interest in the education of gifted children and some were engaged in carrying on special programs¹. Associations for the gifted, which include parents and other interested laymen as well as professional educators, by then existed in several states, but the South Australian Association appeared to be the most active one.

1. I did not visit Queensland, Tasmania or the Northern Territory in 1978.

Each of the Directors-General with whom I met expressed interest in the area, as well as reservations. I saw little evidence of active engagement in fostering educational efforts on behalf of the intellectually gifted, but neither was there evidence of any attempt to impede the work of the few individual principals or curriculum specialists who had initiated and were carrying out special programs.

Nevertheless, there were some impressive programs for youngsters talented in the arts, especially in music, and many secondary schools had long established classes for the mathematically talented and, less frequently, for those with special abilities and/or interests in foreign languages. In New South Wales there were special high schools for the academically talented, and special classes in elementary schools (which I did not visit).

A description of the nature and extent of special programs was presented by the Directors-General of each state at a conference in Adelaide in September 1976, and summarised by the Australian Education Council in a document entitled 'The education of gifted children in Australia' (1977). Although there were some variations from State to State, both in existing practices and in future intents, the general situation for the country as a whole, as summarised in the document, was that "Australia lags behind some other countries in its concern with the education of gifted children in schools" (p.2).

By June 1980 there was a marked change in the extent of interest in and the scope of programs. A series of studies undertaken at State and national levels led to documents which bore witness to the growing realisation of the importance of catering for gifted/talented students in the schools. And in most of the States and Territories various new programs were in evidence. Although only one State (Western Australia) had actually promulgated an official policy specifically dealing with the education of gifted children, several other States have established special committees or task forces to draft proposals for policy considerations (New South Wales, Tasmania, South Australia), some of which have already been prepared and are under consideration. While not addressing the education of gifted/talented children exclusively, the Northern Territory adopted a policy stressing the importance of "appropriate education for all" of which special provisions for the gifted is an integral part. In several States (New South Wales, Northern Territory, South Australia and Western Australia), special positions were created in the State Education Departments to foster, co-ordinate, supervise and advise on programs for the gifted, thus giving this area official recognition.

The increased concern has also been evidenced by the growing number of parent-teacher groups concerned with the education of the gifted and the expanded membership of those formerly established. In each State and in the Northern Territory such organisations now exist.

An effective barometer of the growing interest in this area is represented by the action of the Schools Commission in constituting an Advisory Group charged with reviewing policies and practices on a State by State (and Territory) basis, exposing and analysing various issues which emerge from these summaries, assessing the state of the art in the United States and Great Britain and presenting proposals to the Commission.

The Advisory Group, chaired by the Director-General of Education for Western Australia, includes representatives from most of the States, drawn from government schools, independent schools, tertiary institutions and parent groups.

Although the various efforts are not evenly distributed across the country, and most are at a nascent stage, often representing tentative first steps, the education of gifted/talented children has clearly moved up on Australia's educational agenda.

UNITED STATES

What have been some of the major developments in educational policy and practices for the gifted in the United States during the same period?

The current 'state of the art' in the United States is summarised in two chapters in the 78th NSSE Yearbook (1979). Jackson (1979) discusses the developments from the late 1960s until the present national and State concern and involvement, and Zettel (1979) reports the findings from a 1977 national survey of the State Education agencies to determine "the current status of services to gifted and talented children and youth" (p.65). From both articles one may conclude that there has been a marked upswing both in attitudes toward and support for the education of the gifted/talented in the 1970s, although the level of both varies from State to State. In 1975, for the first time since the early 1960s, the Federal Government made available categorical funds for the financial year 1976 under the Special Projects Act of P.L. 93-380, Section 40A. But the amount allocated (\$2.56m) was more a token of commitment to implementing the Marland report (1972) than a sum sufficient to provide even a minimum of needed support. The greatest share of these monies was earmarked for grants to State Education agencies, where, according to Marland, commitment to the education of gifted pupils is "the most determinative factor in the development of strong programming" (Jackson, 1979, p.51).

The second largest category of grants was to local projects and 'model' programs on the assumption that these would generate a 'ripple effect' and thus stimulate the spread of efforts. It is not clear whether, or to what extent, Federal funding of special projects for educating gifted/talented students will become a regularised and continuous aspect of Federal aid to education. However, it is highly probable that the Office of the Gifted and Talented within the United States Office of Education (OGT) and the National/State Leadership Training Institute on the Gifted and Talented (LTI) will continue to be supported in the role of providing leadership, each in its own way, to State and local education agencies and arranging opportunities (conferences, workshops, information exchanges) for cross-fertilisation among States. These agencies have, more or less directly, also played an advocacy role in generating Federal, State and local interest in and support for programs for the gifted/talented.

As of 1978, thirty-eight States had passed some form of legislation mandating educational provisions for the gifted/talented. In some instances, the mandate exists but is not backed by funding while in at least sixteen States special monies are earmarked to provide program support to every local education agency. In addition, about half the States have full-time co-ordinators for gifted education, twice the number which were in place in 1971.

As Jackson (1979) suggests, the most significant contribution of the Marland report was to give official recognition to the gifted and talented as a special but varied population with particular educational needs, thus undercutting the assumption that such children can, somehow, make it on their own.

Whether the positive developments in the education of gifted/talented children in the United States seen during the current decade represent more than just another swing of the pendulum, another phase in the "love-hate" relationship (Gallagher, 1979) between American educational policy and gifted children is yet to be seen. There is a general sense of optimism that, with increasing State-level involvement, with more active advocacy groups (lay and professional), with increased participation of communities and private institutions, and with the broadened definition of giftedness to include not only the intellectually or academically gifted, but also those 'capable of high performance' in the visual and performing arts, leadership, psychomotor skills and creative thinking, the education of the gifted will retain a permanent place in American educational policy.

RESEARCH ON THE GIFTED/TALENTED

An examination of the 1975-76 and the 1976-77 annual reports of the Education Research and Development Committee in Australia found no single project specifically concerned with the education of gifted/talented students. In light of the wide array of educational concerns which did receive research funds, it is probable that the special problems of children with high-level abilities is either not of interest to the research community or that grant applications in this area have not been funded. This state of affairs exists despite the Schools Commission's clear recognition of the need for such research. In 'The education of gifted children in Australia' (Australian Education Council, 1977), the following statement appears in the section developed by the Schools Commission in August 1976 :

It is important to note that there has been a paucity of investigations dealing with gifted children. Although a number of studies are now beginning to appear, there is still a need for further research, specifically into such areas as the efficacy of various curricula, the different methods of teaching and the organisation (for example, acceleration, special classes, and enrichment programs). (p.2)

The current situation vis a vis research on the gifted/talented in the United States is particularly disheartening, especially if the availability of Federal funds is used as a barometer. Of the \$2.56m appropriated for the financial year 1976, there was no money whatsoever earmarked for research. As a result, the limited research efforts which do exist must seek support from private foundations or from universities in which they are usually initiated. In some cases they represent doctoral dissertations or other small-scale investigations.

The deliberate omission of research from the current Federal funding effort may reflect a general disaffection with the value of educational research for educational practice. Or, it may grow out of the belief that there is already more known about gifted children and their education than is being applied in program development. But whatever the reasons, a lack of continuing research to examine issues which arise in practice and, in turn, to inform practice, could eventually leave the field sterile, perpetuating unexamined practices based on too little or outdated knowledge.

Both countries could benefit from a mutual examination of current policies relating to support for research on the gifted/talented, an analysis of the domains in which further study is needed and projections of the possible future effects of the current lack of research support.

EGALITARIANISM AND EXCELLENCE - AMBIVALENT ATTITUDES

THE AUSTRALIAN CONTEXT

The major concern which I encountered among many of the laymen and educators with whom I met in Australia in 1978 was a variously articulated fear that special attention to the gifted represents a form of elitism. While recognising, on the one hand, that like all children, those with special gifts or talents need a curriculum and a school experience responsive to their needs, there was, nevertheless, anxiety lest singling these children out in any way, might lead them to view themselves as 'better' than the rest. Similarly, while recognising the importance of expanding the national talent pool in the arts and sciences by encouraging young people to develop their talents, there was an equal commitment to ensuring that the 'leaders' would remain close to the citizenry; that the ability to 'get along' with everybody is of major importance, and that any school procedures which single children out as more able than the generality might jeopardise their sense of identity with and acceptance by the 'common man'.

For example, a discussion with some of the parents of gifted children who had been selected from several Perth primary schools to attend a series of lecture-discussions on various topics not a part of the regular curriculum, reflected this attitude. Several parents, although they brought their children, nevertheless felt that the experience should be available to all children who might be interested and should take place within their regular schools. They worried lest taking their child out of his/her regular school for even one morning a week would engender feelings of superiority on the part of the selected child and a sense of resentment, possibly expressed as social rejection, on the part of the remaining children.

Another, rather personal, consideration appeared to motivate teachers who opposed special programs for the more able, especially if these should involve the formation of separate groups or classes. Teachers referred to such procedures as 'creaming', and argued that they are detrimental to the generality of students. Although their objections were usually expressed as concern for the 'average' students who are deprived of the stimulation and models provided by the more able, what one heard between the lines, however, was their own need for the stimulation and sense of successful accomplishment derived from having at least some outstanding students in their classes.

While most of the voiced ambivalence referred to procedures which involve separating the gifted from the generality of students, some concern was also expressed about giving gifted children more demanding work, even within the normal classroom. These objections were voiced in terms of psychological rather than socio-political beliefs and values. They were expressed as concern lest gifted children be 'pushed' too hard; that in the guise of stimulating them intellectually, they would actually be penalised for their brightness by curtailing their opportunities to play, to enjoy unstructured and informal activities, to socialise, to be 'just normal children'. Along similar lines was the concern lest special programs for gifted pupils develop a competitive climate which might be detrimental for some able students who do not function at their best under competitive conditions. But, even such psychological concerns reflected the egalitarian ethos.

Ambivalent attitudes were also expressed with regard to the choice of educational personnel for the gifted/talented. On the one hand, almost everyone agreed that talented students need to work with highly skilled staff, with people who have considerable expertise in various subject areas and who can stimulate involvement and act as intellectual/artistic/creative role models for their future counterparts. On the other hand, there was an equally strong conviction that the 'best' teachers should be made available to those children who are not self-motivated, who need help in achieving even to a minimum standard. Given a limited pool of 'excellent' teachers, to whom should they be assigned? The question was often raised in terms of 'fairness', but also reflected concerns about national priorities: is it more important for society to provide the most able and talented with the best possible tuition so as to enable them to develop their special gifts and thus extend the pool of talents needed by society? Or, is it more important that the best instructional talent be placed in the service of the average and below average learners to ensure some common level of attainment?

The Schools Commission's suggested solution (Australian Education Council report, 1977) of developing Special Interest Centres reflects an attempt to resolve the issue. Such centres would cater to students with "special interests and aptitudes" (p.4) which would be ancillary to the regular school program and would make use of the part-time services of professionals from various specialised fields. Each such centre might cover one or more content area and be available within a school, or be "common to several schools in a locality on a syndicate basis" (p.4). The centres might operate during school hours as well as before or after school, on Saturdays or during vacations.

Whether such a plan is an effective educational substitute for more comprehensive programs for gifted students, is open to question. But politically, it has the advantages of not interfering with the comprehensive character of the school and of providing excellent instructors for gifted students, while allaying anxieties lest the best teachers be siphoned off to serve the gifted.

Accompanying these anxieties and in an attempt to resolve the dissonance, one often heard the belief that the existing education systems provide enough opportunities for even the most able young people to be academically challenged, especially at the secondary level; and that the universities certainly enable even the brightest to achieve at their own levels of competence.

Even currently, despite increased efforts on behalf of educating gifted/talented students, the spectre of elitism continues to haunt Australian educators. In many states the official documents stress the importance of providing appropriately for the varied interests and abilities of all children and maintain that, thus, the gifted will, *ipso facto*, be catered for. There is a repeated emphasis on keeping the gifted in their regular schools, preferably in their regular classrooms and placing the responsibility for differentiating learning opportunities on the regular classroom teacher. (See, for example, the Queensland policy statement as reported in the draft report of the Schools Commission Advisory Group, 1980.¹.)

The development of South Australia's Adaptive Education plan is further evidence of the reluctance to recognise the specific requirements of the gifted. Under this plan, teachers are released for six months to a year to receive special training for work with exceptional children and then to return to their schools and share their newly gained knowledge with classroom teachers in improving practices for all exceptional children.

The very lack of official State policies on educating the gifted/talented reflects the ambivalence which continues to permeate educational thinking. Only in Western Australia has an official policy been enunciated which clearly and explicitly recognises the importance of providing educational experiences specifically tailored to gifted/talented students (*Gifted and talented children in Western Australian schools*, Policy from the Director-General's Office, No. 15, June 1978).

¹ Now published as : *The education of gifted students : a discussion paper*; Australia. Schools Commission, Canberra, November 1980.

The belief that special programs for the gifted are essentially elitist in nature was repeatedly expressed by representatives of the independent schools, and was commonly used to justify the general lack of such programs. Although there has been some reconsideration in the last few years and a few independent schools have actually established special programs, the general tone was one of great caution. Those independent schools which tend to cater to a relatively select population, and provide high-level, rigorous academic training, saw their current efforts as adequate for all their pupils, perhaps with the exception of the one or two rare students who are extraordinarily precocious and who, they feel, need some special treatment.

But for almost all the independent schools, whether highly selective or not, the special educational problems of gifted/ talented students generally remained low on their agendas.

It was interesting that ambivalent attitudes were most often voiced with regard to the intellectually or academically gifted, and rarely, if ever, when talking about children talented in music, dance or drama. This phenomenon is actually seen in the availability and expansion of special secondary schools or programs in the arts (especially in music), which meet with little objection, while various objections continue to be raised to the existence of schools which select children on the basis of academic ability and even to developing special academic programs within the comprehensive high schools.

In this connection it is interesting to note the statement of the New South Wales Committee appointed by the Minister of Education to inquire into the education of talented children (1977). The Committee recommended the phasing out of academically selective high schools but suggested special centres or special classes *only* for children talented in the performing arts (*The education of the talented child*, Report of the Committee appointed by the Minister for Education to enquire into the Education of the Talented Child, Sydney, 1977).

There are two exceptions in the application of these value norms. Both in mathematics and in foreign languages special provisions are made and accepted for those who show aptitude in these areas, while no special provisions are made for students with outstanding ability in history, literature, science or across all subjects. Special mathematics classes are found in many schools, and while attendance is sometimes based on self-selection, the majority of pupils who enter these and continue to the more advanced levels have high mathematical aptitude. Advanced courses for high aptitude students in foreign languages are also not uncommon and in South Australia, for example, there is a high school which specialises in foreign languages and admits students from

all over the city. It is noteworthy that the Australian Education Council summary of the report from Western Australia (in *The education of gifted children in Australia*, 1977) cites efforts at the primary level to "develop talents in music, mathematics and languages ..." and in the secondary schools, "special tuition is provided to cater for highly talented students in areas of arts and crafts, music, ballet, languages and mathematics" (p.1). In fact, as of mid 1980 there were some nine specialist high schools in the arts, (art, music, dance/drama) and four in foreign languages as well as seven additional high schools which serve as 'major centres' for foreign language learning. One high school has developed a specialisation in mathematics, but no specialist schools or even 'major centres' are reported in any of the other academic subjects.

What accounts for this difference in attitudes? It is almost as if the distinction is based on some unstated criteria for judging which abilities may legitimately be considered 'special', and which are 'common' and expected of everyone. Clearly, there is no general expectation that every child must be successful in music or art; or that failure in these areas reflects pejoratively on a student. On the other hand, a poor showing in English or science or the social studies marks a student as inadequate. In a related way, poor performance in mathematics or foreign languages does not necessarily stigmatise a student as 'not too bright'. It is still socially acceptable, especially for women, to admit to mathematical incompetence, and knowledge of one or more foreign languages is not viewed as essential, or the lack of such knowledge as denigrating. But it is not acceptable to admit to illiteracy or the inability to learn through verbal and printed communication. It thus appears that singling out individuals for special attention because of their more advanced status in areas in which all are expected to succeed is viewed as denigrating to those who are 'left behind'. But in areas in which no expectation for general success is held, singling out the talented is less often viewed as unfair or uncomplementary to the rest.

In summary, ambivalence toward educating outstanding pupils, particularly in academic areas, continues to characterise Australian attitudes. The fear of 'elitism', though less frequently expressed in 1980 than it had been in 1978, still colours the perceptions and actions of many educators, both in the public and private sectors, and often acts as a deterrent to developing effective programs.

THE UNITED STATES CONTEXT

The ambivalent attitudes which derive from the conflict between deeply rooted belief systems of egalitarianism, on the one hand, and the recognition of society's need for developed talent and the special educational needs of gifted

children on the other, are as characteristic of the United States as they are of Australia. In fact, the recurrent shifts in American attitudes toward educating gifted children reflect the prepotency of one or the other set of values throughout American history.

At the beginning of the 19th century, in the *Notes on the State of Virginia* (Lee, 1961), Thomas Jefferson proposed, along with the establishment of three-year free public schools for all children, a scheme whereby the most able boys (*sic!*) among those too poor to pay for further schooling could be selected for additional study so that "twenty of the best geniuses could be raked from the rubbish annually and be instructed at the public expense..." (p.94). The Jeffersonian belief that a democracy must further excellence and provide, at public expense, for the education of the most able, conflicted with the alternative view, often referred to as Jacksonian, that public education must be the great leveller, must provide the common bases for building a cohesive society, free of the aristocratic patterns of the European societies from which the Americans had come.

As noted earlier, attitudes toward the special education of the gifted have shown marked and extreme shifts during the 20th century. There is, as yet, no systematic analysis of the relationship between the variations in the American stance toward the education of the gifted and changes in the socio-political climate of the country. While it appears as if concern for developing talent resources decreases in direct proportion as concerns for the education of the under-educated and disadvantaged increases, no one has as yet identified with any precision the corresponding national circumstances during the last century which have triggered the shifts. Based on the fluctuations involved during the past three decades, it is tempting to argue, as does Tannenbaum (1979), that both the positive and negative attitudes are a response to anxiety. When the nation is anxious about becoming vulnerable to outside threat as a result of underdeveloped brainpower resources, as was the case following World War II and particularly after the landing of the Soviet Sputnik, then the nation moves toward increasing efforts at finding and developing its talent pool or, at least, those talents which are viewed as essential. When, on the other hand, there is anxiety lest social inequities threaten the inner stability of the society, then the response is to divert resources to right injustices and the national priorities shift to improving the life chances of the disadvantaged through education, as occurred from the mid 1960s to the early 1970s. What is clear, despite Gardner's (1961) arguments that our society can no longer "choose to educate a few people exceedingly well or to educate a great number of people somewhat less well" (p.21), is that "we have not yet succeeded in paying equal attention simultaneously to our most and least successful achievers at school" (Tannenbaum, 1979, p.5).

Thus, the two belief systems about the role of education in a democracy have existed in the American society since its inception. They have always been uneasy bedfellows, displacing one another as the weight of socio-political events and consequent anxieties activated the one or the other. The statements by Tumin (1963) and Gardner (1961) cited below, exemplify the extreme divergence in educational aims which results from the two positions.

Tumin (1963) argued that high intellectual or academic ability reflects fortunate environmental circumstances; that, by implication, special programs for the gifted are tantamount to reinstating "an ancient aristocratic notion that the well-born deserve what they have because they are well-born." He sums up his argument as follows:

...equal and equally good education demands that the schools should cease immediately and forever from being conducted as talent-scout agencies. We are not, as educators, in the business of seeking out rare and commercially valuable talents. We are not running art galleries or troupes of performing horses...We are a farce rather than a democratic school system if we build our schools and their structures of internal rewards around the notion of special places for those children who by virtue of lucky birth and/or lucky upbringing can perform more adequately the tasks we have set them. To reward some is to punish others. (p.24)

Gardner (1961), on the other hand, took a diametrically opposed position as he argued against the substitution of *equality of outcomes* for *equality of opportunity* as the measure of the validity of education in a democracy :

...When the rewriting of the rules is designed to banish excellence, to rule out distinguished attainment, to inhibit spirited individuals, then all who have a stake in the continued vitality of democracy must protest.

Every democracy must encourage high individual performance. If it does not, then it closes itself off from the mainsprings of its dynamism and talent and imagination. The traditional democratic invitation on the individual to realise his full potentialities becomes meaningless. More, perhaps, than any other form of government a democracy must maintain what Ralph Barton Perry has called 'an express insistence upon quality and distinction'. The great advantage of the conception of equality of opportunity is that it candidly recognises differences in achievement. By allowing free play to these differences, it preserves the freedom to excel which counts for so much in terms of individual aspiration, and has produced so much of mankind's greatness. (p.21)

American education has not taken a consistent position in dealing with these conflicting, dissonant beliefs. The ambivalence of the educational policy makers reflects the ambivalence built into the American ethos, and commitment to the education of gifted/talented children has shifted with shifts in the national temper. Currently, as already noted, the pendulum has, once again, swung in favour of special education for the gifted/talented. But there remain strong opposing voices which fear that such an educational commitment will impede racial integration, will deflect resources from improving the education of the disadvantaged and will conflict with efforts to achieve *equality of outcome* for all children.

Both in Australia and the United States, the tension between apparently contradictory values has impeded the development of stable educational policies and programs for gifted/talented students. A cross-national examination of the socio-political events which have historically precipitated shifts in the prepotency of one set of values over the other and the consequent changes in educational commitments might provide a useful perspective from which to examine the current status of the education of gifted/talented young people in both countries and, hopefully, provide a framework for the evolution of more stable policies in the future.

DEFINING AND ASSESSING GIFTEDNESS/TALENT : DETERMINATION OF FIELDS, STANDARDS AND CRITERIA

In both Australia and the United States there continue to be issues related to the determination of what constitutes giftedness/talent. These pertain to : a) determining the fields in which outstanding performance should fall under the rubric of talent, and which of these areas should receive support; b) deciding whether common or varied standards should be applied in identifying individuals as gifted/talented in various areas; and c) selecting criteria for choosing assessment procedures appropriate to particular talent areas. More specific questions deal with actual means of identifying the gifted/talented in various domains and with the limitations inherent in procedures currently in use. Like the issues discussed in the previous section, some of the issues related to seeking and identifying the talented have strong political undertones.

DETERMINING TALENT AREAS

How can one decide in which areas of human endeavour outstanding performance should be considered 'talent'? Should the able sanitation worker be considered talented, or the highly competent secretary, or the effective homemaker? Or, shall the term be reserved for the academic and artistic domains? What guidelines can one apply to making such decisions? Webster's New Collegiate Dictionary defines 'gifted' as 'endowed by nature with gifts or a gift; talented'; and talent

is defined as 'the abilities, powers and gifts bestowed upon a man; natural endowments' or a 'natural capacity or gift'. These definitions admit to the category of talent only those areas in which one is born with special abilities or, at least, with the unique potential for developing into a high-level performer. Such a definition would exclude even excellent performance in areas in which the skill or task can be learned by almost anyone, regardless of natural endowment, who may be interested and willing to devote the necessary effort to perfect performance.

The implicit assumption that giftedness involves some measure of 'natural endowment', although it is understood that such endowment is inevitably shaped by opportunities for learning and development, is reflected in the current expanded definitions of talent. The currently effective United States definition proposed in the Marland (1972) report includes, along with general intellectual ability, specific academic aptitudes, creative abilities, leadership abilities, talent in the visual and performing arts and psychomotor ability. The Australian list, designed in connection with a discussion of Special Interest Centres (Australian Education Council, 1977), is similar, though not identical. It includes artistic/cultural (music, drama, ballet, visual arts); physical education (sport, co-ordinated movement); scientific (general science, physics, chemistry, mathematics); general intellectual development, and technical (mechanical, design, carpentry, electrical) ability. The American list is couched in terms of general aptitudes; the Australian list refers to more specific performance areas. But, neither of the lists includes such endeavours as, for example, home-making or vocational skills which probably require little natural endowment for mastery.

However, absolute lines are hard to draw. One could make a case for including outstanding performance in "...any socially useful field of human endeavour" (Witty, 1951). But such a definition is so inclusive as to cease to be functional. A somewhat less global definition, but one which still leaves room for ambiguity, limits inclusion to "those areas that have consistently made an outstanding contribution to human civilisation" (Passow, Goldberg, Tannenbaum & French, 1955, p.6). But, such a definition is open to shifting decisions as to which efforts should be considered of major importance to the enhancement of civilisation.

The official United States designation of talent fields represents a significant step toward broadening the conception of talent without making it over-inclusive. However, it is currently more rhetorical than operational. While general intellectual ability and some academic talents have been well delineated and researched and are accessible to relatively valid and reliable assessment, other areas, such as social leadership or psychomotor ability remain vague and their

parameters unspecified. In discussing this issue, Gallagher (1979) asks : "What is leadership ability? Is it the same whether we think of the captain of a football team, or the leader of a debate team, or the leader of a student protest movement? What is the test or means for identifying such leadership characteristics?" (p.31).

Actually, until there is a clearer understanding of the characteristics of leadership talent in various areas and under various circumstances it is not possible to determine whether there are general earmarks of such talent, or whether different abilities enter into leadership in different situations. It is even possible that the athletic team captain attained his position because of athletic prowess; the debate team captain because of high verbal ability, rather than as a result of special 'leadership' ability. But even if there are additional elements in the effective performance of leadership roles, they may differ as widely as being an effective manipulator of others to gain one's own goals and being an effective facilitator of others' purposes.

The designation 'psychomotor' talent is as poorly specified. It can encompass such areas as athletic or gymnastic prowess, some forms of artistic talent which require a high level of fine motor co-ordination such as calligraphy or jewellery design, or talent in dance, which is usually included in the performing arts. It is not clear what purpose is served by lumping together a variety of diverse abilities, most of which are already encompassed by other categories. If the main purpose of this category is to ensure that athletics-gymnastics is recognised as a talent field, then labelling the category 'athletic-gymnastic' would remove much of the ambiguity inherent in the 'psychomotor' label.

The inclusion of 'creative or productive thinking' as a talent category is also problematical. Is creativity a field of talent or is it rather a concomitant of talent in specific fields? Does the category refer to people who achieve high scores on tests of divergent thinking, or does it refer to individuals who have demonstrated "...the ability to solve problems by original and useful methods" (Fox, 1963, p.141)? Although there is some evidence (Torrance, 1977) that high school students who score high on tests of divergent thinking report more and higher quality creative achievements twelve years later than do lower scorers, the evidence is still rather shaky as it is based on self-report rather than on more objective assessments. There are still many questions about the validity of equating scores on divergent thinking tests with the potential for effective, original and innovative productivity in some domain. For example, comparison of the divergent thinking scores of a group of highly creative architects with those of a group of competent, but not especially innovative architects (McKinnon, 1962), found no significant differences. The differentiating characteristics were personological, such as greater openness to experience,

more self-awareness or a stronger belief in the importance of one's contribution and strong resistance to letting anything interfere with its fruition.

There is still considerable disagreement over the designation of a high divergent thinking score as an independent talent category. Nor is it clear whether creativity is a generalised characteristic, which may be apparent in all a person does, or whether it is a mode of functioning within a particular talent area, and operates only within it. And although high divergent thinking scores occur both in the presence and absence of high IQ (the correlation between the two scores is relatively low), or in the presence or absence of some specific talent, there is as yet little evidence that high divergent thinking scores in the absence of relatively high intelligence or talent will result in significant, innovative and unusual performance in some area of endeavour.

But even if after considerable research and discussion the multi-faceted approach to designating talent is made less ambiguous and more operational, determination of the particular abilities and talents which should be nurtured through public support at a given point in time remains at issue, especially when resources are limited and/or where the national leadership perceives a pressing need for high-level personnel in particular fields. The situation in the United States after World War II, and especially after the launching of Sputnik I in 1957, is a case in point. Manpower assessments following World War II indicated a serious shortage of high-level scientists and mathematicians (Wolfe, 1954), and insistent voices blamed the schools for this state of affairs (Bestor, 1953). By 1957, when the Soviet Union ostensibly demonstrated its scientific superiority by beating the United States into space, the Federal Government embarked upon various crash programs. Federally funded curriculum revision and teacher education programs were initiated to improve and update science and mathematics education. In addition, gifted young people were provided with various incentives to become science, mathematics or engineering majors. Many high-ability students, intending to major in the arts, humanities or the social sciences, were personally approached and exposed to both subtle and direct pressure to shift into mathematics, engineering or the physical sciences. Schools were provided with funds to improve science laboratory facilities and to send teachers for special training in the sciences or mathematics.

It was not until some years later that modest Federal monies were allocated for curriculum revisions in English and history. But little if any support was available for education in the arts or in other humanities fields. The major thrust through the early 1960s remained on science and mathematics..

Although the strong push to 'guide' gifted young people into the sciences backfired to some extent as considerable numbers of the most able students shifted majors by their sophomore year (Donivan, 1968), this example points clearly to the political bases of educational policies and the temporal constraints which political exigencies can place upon the determination of which fields will be supported in the development of talent.

Not surprisingly, the national thrust to develop more scientists and mathematicians had a spill-over effect in support for renewed educational and research efforts related to the intellectually gifted, in general. In the period between 1957 and 1962 there was a great expansion in the number and variety of programs for the gifted from K through grade 12. For example, while a 1950 survey of the Ohio schools (Ohio Commission, 1951) found a mere 2 per cent reporting special programs for the gifted, a 1960 National Education Association survey (NEA, 1960a) reported that 75 per cent of secondary schools, nationwide, were offering special programs. The same period also saw the flourishing of research activities aimed at increasing understanding of giftedness/talent and improving educational efforts on their behalf.

The situation in Australia does not currently reflect any attempt to support talent development in fields with high military or political pay-off. The very fact that special education for the talented has been, until recently, most widespread in the arts - areas not generally considered to have significant political pay-off - suggests that the determination of which talent fields will receive special educational resources is, as noted before, more a function of perceptions of egalitarianism than of social need for particular manpower categories. But the possibility of such contingencies arising in the future certainly exists and consideration of safeguards in the event of such political pressures is certainly warranted.

Perhaps the broadened definition of talent provided by the Marland report (1972), and subsequently incorporated into Federal legislation in the United States, although not an adequate operational guide to identification and program development, may nevertheless, provide some measure of protection against one-sided, politically expedient determinations of talent areas which merit special educational provisions and support. Would some such formal/legal set of guidelines be desirable and possible in the Australian context?

STANDARDS FOR DETERMINING GIFTEDNESS/TALENT

Since the distribution of ability in almost any area represents a continuum, it becomes necessary to determine some point at which potential and/or performance will qualify as gifted or talented. Although there are few consistent empirical or

theoretical bases on which to determine these points, regardless of the mode of assessment - tests of intelligence, achievement scores, teacher ratings or expert judgments of performance - standards for selection must be set for any identification procedure.

When Lewis Terman (1925) set about finding a sample of 'geniuses', he originally determined the cut-off point so as to find the children who scored in the top 1 per cent of the total age cohort on measured intelligence (above IQ 135 on the 1916 revision of the Stanford-Binet). Leta Stetter Hollingworth (1942) selected a group of children who scored above 180 on the Stanford-Binet. Conant (1959) proposed two categories of highly able students - the top 5 per cent to be deemed as 'gifted' and the top 15 to 20 per cent to be called 'academically talented'. Some States in the United States have mandated a specific IQ score for eligibility for special programs for the gifted. In Pennsylvania, for example, to be eligible for special enrichment programs, a child must achieve a score of 130 on an individually administered intelligence test, thus limiting such educational provision to about 2 per cent of the population. Individual school districts in the United States have used IQ cut-off points varying all the way from 116, including about 16 per cent of the population, to 140, including less than 1 per cent of the population.

The lack of consistency is equally apparent when achievement scores are used. Children may be selected for special programs on the basis of their scores on reading tests, mathematics tests, a combination of the two, or some broader based composite score. In some cases, children must score at least two and a half years above grade level in reading, and one and a half years above in mathematics (as for admission to the New York City Special Progress classes); in others, they must score at least one standard deviation above the mean.

Assessments of musicianship, artistic products or dramatic or dance performance do not lend themselves as readily to quantification and generally depend on some form of pooled judgments. In these areas, it is currently unrealistic to seek the development of a set of common objective standards since selection is largely a matter of the judges' tastes, their predilection for particular styles or their intuitive sense of a candidate's potential for developing into an 'artist'.

In the area of 'creativity', selection criteria have been based on both objective and subjective judgments. Those who define creativity in terms of scores on divergent thinking tests (Guilford, 1966; Torrance, 1959) have commonly identified as 'creative' those who score in the top 20 per cent of the population taking the test. Where creativity is assessed through an analysis of performance and/or products in particular fields, the problems of setting selection standards are even more complicated than those involved in selecting the technically

accomplished or those who show mastery in the application of existing knowledge.

As suggested earlier, the area of leadership is at present too ill-defined to provide assessment guidelines and, therefore, any discussion of standards of performance by which to select the talented is premature. In the athletic-gymnastic domain, there are, as Gallagher (1979) suggests "...many more sophisticated talent searches...than most of us have realised" (p.31). Perhaps the successful approaches used in selecting talented athletes could provide a model for searches in other performing areas.

Without addressing the issues of specific standards or cut-off points for selecting the talented in particular fields, Newland (1976) implicitly suggests that the standards set for a particular field should derive from an overall estimate of society's "approximation of how many are needed to carry out its high-level operations". On the basis of such an estimate, psychologists must then "delineate those behavioural characteristics which individuals must have to meet their high-level responsibilities" and "the schools then have the job of locating that portion of the school population which is large enough to meet the needs of society..." (pp.11-12). Taking the proportion of the United States population engaged in the fifty-one occupations in the top three occupational groups in 1950 and applying "informed judgements" on the "percentages of persons within each occupational category who would need to operate at a high conceptualisation level" (p.15), Newland arrived at an estimate of 5 per cent of the working population. Adding 3 per cent to account for "slippage", he suggested that about 8 per cent of the population is needed to meet society's high-level needs and, therefore, about 8 per cent of the population should be identified and educated as gifted.

Such an approach is fraught with dangers, which Newland himself recognises, as it admits to the category of giftedness only as many as "society" may perceive it needs at some point in time rather than those who meet some aptitude or achievement standards.

In some cases, both in the United States and in Australia, the number of students accepted as gifted/talented is determined by the number who can be accommodated by a particular school, class or program. If, for example, a school like the Bronx High School of Science in New York City or the James Ruse Agricultural High School in Sydney has *x* places, then only the top *x* pupils will be admitted annually, regardless of the performance level of the next ten or twenty of the ranked applicants.

Thus, the issue of determining standards for selection, regardless of the assessment procedures employed, remains unresolved.

Another set of problems in the determination and application of standards derives from variations in the ability levels of the populations from which the gifted in a particular talent area are to be selected. Where a national or statewide cut-off point on a standardised, objective measure is used as the selection standard, it is possible for almost half of the pupils to be identified as gifted in one school, none in another. This is especially possible where schools enrol pupils on a neighbourhood basis, as neighbourhoods vary in socio-economic and ethnic composition. But since almost all identification procedures include some subjective judgments, such as class grades (or standing in class), evaluation of performance by expert examiners etc., the variable reference groups used in arriving at such grades or judgments will further affect an individual's chances of being identified as gifted/talented.

For example, if an international panel of judges were to seek talented wood-carvers in various countries, applying the same standards everywhere, they might well identify 25 per cent of the male population of Bali as gifted, and only perhaps one half of 1 per cent of the population of New South Wales. If, however, a group of Balinese judges were to make the determination only in Bali, they might identify only those who excelled above the high level of their general population, and thus leave out a large proportion of those who, by the use of more universal standards, might have been included. Conversely, a group of New South Wales judges might include pupils who excelled over the population from which they came, but who might actually be less talented than many of the Balinese not selected.

A rather dubious attempt to address this issue can be seen in the 'scaling of marks' in arriving at an 'aggregate mark' for the Higher School Certificate in New South Wales. Although this procedure is not directly related to the selection of gifted/talented, it does have an indirect bearing as it enters into the determination of entry requirements for tertiary institutions.

The current system was introduced in 1976 (Cook & Cooney, 1976) in relation to the restructured Higher School Certificate curriculum which replaced the older *level* structure with a system of *units*. Its purpose was "to ensure that candidates are not penalised or advantaged by the nature of the various course candidatures with whom they compete..." (Cook & Cooney, 1976, p.12). Thus, a student's actual mark in a particular subject is adjusted to account for the academic ability level of all those who have taken the examination in that course. The adjustment is based on an "internal criterion" - the average mark of all the candidates in the particular course on all the other eligible courses which they submit. Since the number of points a student receives reflects an implicit ranking procedure - the best paper gets fifty points - a student's

composite standing is either raised or lowered depending upon the performance level of his/her classmates in all their other subjects.

This procedure is intended to ensure "parity of esteem" (p.3) among the various courses, without any weighting for subject difficulty. Instead, it makes the tacit assumption that more able students will take the more difficult subjects.

The determination of selection standards poses various problems. Some derive from a lack of clarity of what it means to be talented in a particular field and a consequent lack of useful assessment procedures. Some reflect lack of agreement in determining where the cut-off points should be set and the bases on which they should be determined. And for some fields of talent there are practical difficulties in designing common, replicable assessment procedures. As a result, there is a lack of consistency in the standards applied for selection from place to place and from time to time.

SINGLE OR MULTIPLE STANDARDS IN IDENTIFICATION

Beyond the questions of determining general standards for distinguishing between those who are and those who are not to be considered talented in some areas, there is the question of whether a single, universal standard should be used in determining giftedness or whether the standards should vary according to differences in the candidates' background, personality or interests. Although the term giftedness carries the connotation of natural endowment, there can be no argument about the importance of environmental encounters in determining whether the endowment is translated into performance. A child may be born with musical talent, but unless exposed to music, may never develop the talent and may not even know that he/she has it. Similarly, some children may have the potential for high-level intellectual functioning, but if not challenged, not given the opportunity to apply these abilities in the early years, may perform at a level considerably lower than would be the case for a child of similar potential ability whose intelligence was nurtured through many varied exposures to challenging intellectual tasks.

Unfortunately, it is not yet possible to assess potential ability. In fact, it is not at all clear what such an assessment might look like. All assessments must rely on some evidences of performance and, in most cases, the performance is, in large measure, a function of learning. The assumption underlying intelligence testing, for example, is that, to the extent that children have had relatively comparable opportunities (within a wide range) to develop and learn, those who are brighter will learn more than the less bright and will deal more effectively with what they have learned. This assumption is tenable so long as the learning opportunities of the tested population have been within the 'allowable range' of

differences. But where there are segments of the population which, for reasons of discrimination, poverty, geographic isolation or other detrimental demographic or personal variables, have been severely limited in their opportunities to develop intellectually, then the assumptions no longer hold.

The last decade in the United States has witnessed considerable and often acrimonious controversy regarding the genetic versus environmental causes of the poor intellectual test performance and low academic achievement evidenced by members of socially and/or economically disadvantaged groups. Regardless of the degree to which genetic factors may account for the observed differences in performance, the fact remains that for members of such disadvantaged groups, the assumption of 'relatively common exposure' to learning, which underlies standardised tests, simply does not hold.

However, attempts to build "Culture Fair" (Davis & Eells, 1953) intelligence tests, which limit their content to material which is, ostensibly, equally familiar to lower and middle class children, still resulted in higher scores by middle class than by lower class children. Several studies of the performance of children from higher and lower socio-economic status levels on the Davis-Eells "games" (Rosenblum, Keller & Papania, 1955; Tate & Voss, 1956) suggested that the poorer performance of lower class children was less a function of their unfamiliarity with the test content than of their "failure to make correct associations, discriminate crucial differences, connect elements of probability in a meaningful manner - in short, failure to abstract" (Tate & Voss, 1956, p.385). These comments suggest that the major difference lies in the degree of abstract thinking evidenced and may well reflect social class values toward and rewards for abstract versus concrete styles of thought (Miller & Swanson, 1960). Thus, the experiences of middle class children are more apt to lead to the intellectual characteristics which are measured by intelligence or aptitude tests and which, in turn, lead to school success than are the intellectually and academically less relevant experiences of lower class or disadvantaged children.

The use of such assessment procedures as intelligence tests, school marks, teacher appraisals, and the application of the same standards as those applied to relatively advantaged populations, finds very few children who would qualify as intellectually or academically gifted in disadvantaged populations. This tends to be true whether the assessments are verbal or non-verbal, individually or group administered.

One could simply conclude that such populations do not produce gifted children, a conclusion reached by the principal and representative staff members of a large high school in Sydney, located in a predominantly migrant area. In an informal discussion, I asked this group of professional educators whether they thought that the existing education system allowed for potentially gifted children from poor or immigrant families to develop their talents. The answer was: "We don't have any gifted children in this school". When asked whether they made any special efforts to locate children with special abilities, two kinds of answers were given. Some responded that the general academic level was so low, that few if any performed at a level which would warrant special attention. Several others argued that even if there were a few potentially gifted children, singling them out for special attention would alienate them from their peers and hurt their 'social adjustment' at home and at school.

But on the assumption that there are potentially gifted children in disadvantaged populations, and furthermore, that such children are less apt to develop their gifts without the school's help than are middle class children, how might they be found? The problem of determining 'who is gifted' in disadvantaged populations can be approached in several ways. One recommendation for accommodating differences in the general intellectual level from one school to another (National Education Association, 1960b) was "that every school must search to include within its gifted student program all those students for whom, because of their special abilities, the regular curriculum is not sufficiently challenging" (p.33). One might argue that such a procedure could result in labelling as 'gifted' in one school children who might score below the average for another school, and as they moved to other schools or to higher education levels could find their self-image in conflict with the reality which they encounter. On the other hand, if the most able pupils of a socially disadvantaged population were given special educational attention, were motivated toward higher achievement and given help with ways of learning and thinking, they might, indeed, achieve high levels of performance.

An early study (Clark, 1956), which lends some credence to the selection of top students relative to the specific population from which they come, examined the performance of the top 10 per cent of the black graduates of Southern high schools who, despite Scholastic Aptitude Test (SAT) scores well below the national average, were admitted to non-segregated colleges. The group, as a whole, was successful. Over 90 per cent achieved four-year averages of C or above, 63 per cent performed above the C level and 12 per cent maintained averages of B+ or better - figures which compared favourably with those for the total population enrolled in the colleges which they attended. Of special interest was the finding that while only 48 per cent of the black students who came from higher socio-economic status homes attained averages above the C level, 70 per cent of these from lower

socio-economic status backgrounds maintained grade averages above C. Thus, the low SAT scores were probably a 'truer' measure of the academic aptitude of the middle class group, than of the lower class group whose learning opportunities had been even more severely curtailed than those of their more affluent peers.

The issues surrounding the identification of and special provisions for gifted disadvantaged children have been the focus of political and educational controversies in the United States for almost two decades. Political opponents of the use of intelligence or aptitude measures in the identification of gifted children argued that such tests represent efforts on the part of the middle class establishment to denigrate minority or other disadvantaged children. In fact, special New York City classes for gifted children (IGC) in multi-ethnic communities rarely included black or Hispanic children, and schools in ghetto and/or low income neighbourhoods rarely, if ever, had classes for the intellectually gifted. By the mid 1960s, various efforts were under way to admit minority students to institutions of higher education or to special facilities for the gifted even though such students would not have been admitted on the basis of the usual cut-off scores on standard assessment procedures. Many colleges instituted 'open enrolment' policies so that a high school diploma was the only prerequisite for admission. In cases where admission is by special examination, as in the New York City Bronx High School of Science, two separate score distributions were developed and entrants were drawn proportionally from the top of the two distributions until all places were filled. At the elementary level, greater emphasis was placed on looking for behavioural indices of brightness than on test scores. Many lists of characteristics were developed and, in some instances, teachers were given special help in identifying potentially bright pupils (Tongue & Sperling, 1976). Both peers (Torrance, 1979) and parents (Robinson, Roedell & Jackson, 1979) have been used as sources of information about outstanding abilities and have been reported to discover talented individuals not found by more standard procedures.

The general consensus in the United States is that, in the light of the great heterogeneity of backgrounds of American school children, no one set of standards can be fairly applicable to all; rather, the most able (whether intellectually, artistically or socially) among various disadvantaged minority groups must be found and their abilities and talents encouraged to develop. As a result, many programs for the gifted have moved to include children from disadvantaged backgrounds who might not have qualified by commonly used standards.

Nevertheless, the issue remains unresolved. The Supreme Court in ruling in the Bache case opposed as discriminatory the use of different admission standards for majority and minority

applicants. Yet, if this principle were applied to the selection of gifted/talented youngsters for entry into special programs, disproportionately few disadvantaged children would have the opportunity to develop their potential talents. However, the problems become acute only where there is a limited number of places available. Where places are unlimited, no high-ability candidate need be rejected to accommodate disadvantaged youngsters who achieve lower absolute ratings but who may represent the most able of their group.

Until recently, Australian education authorities appeared to focus little attention on finding and encouraging potentially gifted youngsters from lower class or migrant families. The lack of concern may reflect the very limited efforts on behalf of gifted children, in general. With few special programs in operation, there has probably been little political pressure to extend such opportunities to children from ethnic minorities and/or economically disadvantaged status.

There is clear evidence of the considerable concern at both the Federal and State levels in Australia for improving the academic achievement of disadvantaged pupils, in general. This concern is reflected in the Disadvantaged Schools Program of the Schools Commission, which provides special funds to disadvantaged schools. But concern or support for locating the most able pupils in disadvantaged area schools and giving them academic and personal assistance to enable them to develop their potential abilities is just beginning.

In Western Australia, a special task force - the Priority Exceptional Students Study - was appointed by the Director-General to explore possible ways of addressing this issue. The initial approach of the task force was to focus on students from disadvantaged backgrounds who achieve intelligence test scores close to the gifted range but whose school performance falls well below expectation. Special educational attention to such students is certainly worthy of consideration. But as this task force continues its work it plans to examine other categories of disadvantaged students who might be selected as 'potentially' gifted, such as the 'top' performers in a grade or students who show particular academic aptitude in only one area, without reaching the level normally designated as 'gifted'.

CRITERIA FOR SELECTION : PREDICTED POTENTIAL OR ACTUAL ACHIEVEMENT?

Determining criteria for the selection of gifted/talented individuals depends upon the areas of talent involved, the age of the population, the previous experiences to which individuals have been exposed and the nature of the procedures available for assessing particular talents.

However, even within these constraints, decisions often have to be made regarding the nature of the observed behaviours upon which to base the selection of individuals as talented. One of the major issues in identification of gifted/talented is whether to assess actual achievement or the 'potential' for achievement. The former would involve rating academic performance in one or several subject areas, such as musical performance on an instrument, a portfolio of graphic work, examples of creative writing, execution of social or political leadership roles, the actual performance of mechanical tasks, etc. Assessment of 'potential' would derive from aptitude test scores, performance on specially designated drama or dance exercises, observations of 'natural' behaviour and/or ratings of personal characteristics. The latter approach assumes that through an examination of behaviours which are correlates of high-level achievement, or those which characterise high achievers in particular talent areas, one can make relatively valid predictions of the probability of future achievement.

While, ideally, it would be desirable to locate all individuals who have the potential for talented achievement, not only those who already evidence high-level attainments, in reality, valid means for assessing potential ability are not available for all talent areas. But even where some generally predictive aptitude measures are available, such as tests of intelligence or academic aptitude, these too are measures of performance and depend on prior though less specific learning than is true for achievement measures.

Even behavioural characteristics, such as curiosity, positive response to challenging problems, willingness to take risks, enjoyment of manipulating ideas or language or other frequently considered personological earmarks of giftedness, may or may not become overt depending on the values, supports and reinforcements or particular environments.

Recognition of the limitations of various assessment tools need not, however, lead to their abandonment. The controversies around the use of intelligence tests to identify intellectually gifted children is a case in point. The evidence is overwhelming that the majority of those who, as children, achieved high scores on individually administered intelligence tests far more often than their lower scoring peers, achieve excellence in some intellectual or related field of endeavour (Witty & Theman, 1943; Terman & Oden, 1959; Oden, 1978; Sears, 1979). And conversely, the best estimates which could be made of the childhood intelligence test scores of people who, as adults, had made outstanding contributions to the arts, sciences and humanities found that, in most cases, they would have been very high, indeed (Cox, 1926).

While intelligence tests may fail to identify as youngsters some of the people who will, in the future, become artists, writers or even mathematicians, and while they are not capable of indicating specific domains of intellectual talent, they do, nevertheless, locate many of those who have the capacity for high-level performance in academic areas, whether or not they are actually achieving at a commensurate level. Attempts to substitute teacher recommendations has not proved very effective. Since the time of Terman's studies (1925) until today, teacher selection of the gifted frequently fails to include 'gifted' children who are poor achievers, whose work habits are poor, who resist compliance with school demands, or who are difficult to manage in the classroom. On the other hand, they often nominate children who are highly motivated to achieve, work hard at school, comply with school demands and, as a result, are good students but would not qualify as 'gifted' by test standards. While, as noted, there is considerable evidence that high IQ children will, in general, fulfil their early promise as adults, there is, as yet, no evidence on the adult status of the non-gifted high achieving pupils. In the absence of such evidence, it might be wise to use two sets of criteria in identifying the academically gifted - tested intelligence or school achievement. While there will be a considerable overlap between those identified by the two assessment modes, there will, nevertheless, be children who qualify on one but not on the other criterion. This use of two criteria is not the same as requiring that each individual meet both, as is frequently the case; a procedure which may result in barring the very bright poor achiever from much needed special programs.

While tests of intelligence provide relatively objective, valid and reliable measures of general intellectual ability (Terman & Oden, 1959; Oden, 1978; Zimmerman & Woo-Sam, 1970), as noted before, they give little information about specific talents, even in the intellectual domain. A high IQ may reflect high verbal ability or high quantitative ability, or both, or show some other set of intellectual talents. But the single IQ score or even an analysis of intelligence test performance does not provide differential ability information. Here, again, one confronts the question of what evidence to use to select the gifted quantitative thinker, the outstanding verbal reasoner, or the person who deals most effectively with spatial or mechanical material. Are there valid, reliable instruments, minimally dependent on direct instruction, currently available for assessing specific intellectual aptitudes?

Because of the nature of intelligence tests, a high score is most apt to reflect verbal ability, although some tests provide a global non-verbal sub-score as well. But the various dimensions of verbal talent and their interrelationships have only recently begun to be investigated (McGinn, 1976). In the quantitative domain, the last several years have seen a burgeoning of efforts, largely under the leadership of

Julian Stanley (1976a). From the work of the Johns Hopkins group (Study of Mathematically Precocious Youth) it would appear that in the assessment of quantitative talent, especially at the very highest levels, measures of quantitative aptitude are better selectors and predictors of outstanding ability than is teacher selection based on classroom performance.

In such areas as spacial ability, in which the standard elementary and secondary curriculum makes limited demands, actual school achievement is not a useful measure and identification of talent must rely on aptitude measures.

The available evidence appears to challenge the practice of selecting intellectually gifted/talented young people on the basis of a combination of aptitude test scores and teacher recommendations or other indices of achievement. This practice is in use both in the United States and in Australia. Adding a teacher assessment or grading component to test scores may serve to eliminate those gifted/talented children whose high ability is, for various reasons, not apparent in the classroom and who may be the ones in need of special programs to facilitate the development of their talents and achievements.

In the arts areas, the determination of selection criteria is somewhat different. Few valid, theoretically defensible aptitude measures exist for discovering potential literary, musical, artistic, dramatic or dance ability. Generally, actual performance has to be relied upon. For some talents, little formal learning is required to enable the child to 'perform', as in drawing, modelling or acting. But in musical performance, a child must have had the opportunity to learn to play a musical instrument before he or she can demonstrate talent. This is particularly troublesome since learning an instrument is not a part of every child's school curriculum and some potentially talented musicians may never learn to play.

The selection of talented students for special programs in the visual arts, dance and drama, both in Australia and in the United States, is based either on assessment of past performance (e.g., portfolios of art work or successful past experience in drama, etc.) or on some form of 'test performance' under semi-structured conditions, (e.g., responses to prescribed dramatic or dance exercises, auditions, etc.). In all such procedures, decisions depend upon judgements and the varied experiences, style biases and expectation levels of the judges, perforce, lead to subjective rather than objective standards for selection. On the other hand, given the current paucity of valid objective measures and the low validity of various performance check lists, the pooled judgements of highly qualified practitioners or educators in the various arts areas may result in 'fair' and predictive selection.

An illustrative anecdote relates to the selection procedures used by the New York City High School of Performing Arts in the drama program. The staff had worked out elaborate procedures for rating the performance of candidates under relatively standard conditions. Scaled ratings were given for such things as voice timbre, diction, expression of emotion through body movement, effectiveness in communicating through mime, and so forth as students responded to specific stimulus tasks. Several members of the admission committee observed each applicant and made independent ratings. These were pooled, analysed and a composite rating was prepared for each candidate upon which admission decisions were largely based.

Some years ago, as I was observing the 'testing' procedures, the teachers told me that in the early years of the school's existence, John Golden, the famous impressario, sat in on the 'test' sessions. He had no rating sheets, no guidelines. He sat at the back of the room and observed, and at the end of each student's performance put his thumb up or down. Somewhat reluctantly the teachers admitted that Mr. Golden's thumb was a more sensitive predictor of the future acting success of the candidates than the elaborate quasi-objective criteria designed by the teachers!.

As noted earlier, the situation in music is relatively unique among the art areas since performance is contingent upon opportunities to learn to play an instrument. While tests of musical aptitude (Seashore, 1939) tend to be more effective in identifying the tone deaf, the arrhythmic and the musically inept than in selecting the truly talented, nevertheless they make it possible to get a measure, albeit a weak one, of musical aptitude.

Indeed, such a procedure has been in use in two comprehensive high schools in Western Australia, which are centres for the musically talented. Admission to the program is based on aptitude test scores and not on performance proficiency, and opportunities for admitted students to learn to play an instrument are afforded by the school. In these programs, children come from many varied backgrounds, often travel long distances, come early for individual instruction and stay late for orchestral, band, chorus and other group music.

I had an opportunity to hear the combined orchestras of the two schools perform at one of the senior high schools and to talk with the students. I was greatly impressed by the quality of performance, the musical sophistication of the students, their great enthusiasm for the music program and their ready acceptance of the need to 'work harder' in order to fulfil academic requirements while developing their musical talent.

On the other hand, the use of performance criteria characterised the selection procedure at a special music centre located in a comprehensive high school in South Australia. The applicants all played an instrument and admission was on the basis

of the quality of their playing. They, too, engaged in music activities before, during and after the school day while carrying a full academic load. Local musicians are involved in the admission decisions and also participate as teachers. From what I could learn, these children were drawn largely from middle class backgrounds and most of them took private lessons in addition to their school music. The Conservatorium High School in Sydney, a specialised music school located in the Conservatorium of Music, uses even more stringent performance criteria.

It would be interesting to compare the two selection models on such factors as the demographic composition of the students admitted, the relative level of excellence achieved, and the students' commitment to music as a vocation or avocation. Such comparisons would need to take into account differences in facilities and in teaching personnel available in the two situations.

The several issues related to the definition of talent and the identification of gifted/talented youngsters, arise wherever there is concern with adapting educational procedures to the special requirements of high-ability students. All of the problems discussed have been grappled with and some continue to be at issue in the American context. While not all of the issues may be of concern to Australian educators at present, as special efforts on behalf of gifted/talented children expand, as they are now beginning to do, the various issues related to defining talent and locating the talented will become increasingly cogent.

CRITERIA FOR JUDGING THE EFFECTIVENESS OF SPECIAL PROGRAMS FOR THE GIFTED/TALENTED

In an earlier section, a quote from a National Education Association publication (1960b) suggested that any student for whom the existing school curriculum is "not sufficiently challenging" should be included in a gifted student program. The obverse of this proposition is that, to be appropriate for gifted/talented students, a program must be different from what the student could find in the regular school or class and that the difference must be expressed in providing a greater challenge to the student.

Such a perspective suggests that, to be valid, any program explicitly intended for gifted/talented students must, first of all, be able to demonstrate that it does, indeed, provide educational opportunities which the student would not otherwise have. But even where a 'gifted' program provides special learning experiences, the question still remains as to whether it meets the criterion of 'more challenging'. To make such a judgement would require : a) an analysis of the nature of each particular talent domain and of the learnings needed to achieve excellence in the given field; b) a knowledge of the

learning styles, interests and commitments of the individual learners involved; and c) the availability of appropriate personnel and facilities.

The argument has been advanced (Meister, 1958) that the simple fact that gifted learners are brought together for instruction creates a climate which will "...put a teacher on his mettle and give the class a dynamism that is unmistakable when encountered" (p.270). And further, that "the effect of good mind upon good mind creates a whole greater than the sum of its parts" (p.270). If these statements imply that simply grouping able students together will result in measurable academic and motivational advantages, the evidence does not lend strong support to such an argument (Goldberg, 1965; Goldberg, *et al.*, 1966). At least for the intellectually gifted, membership in special schools or classes does not, of itself, result in greater achievement or motivation to learn or even in more students continuing on to higher education than is true of equally able students in regular schools or classes.

Thus, to assess the adequacy of a program for gifted/talented, one must look beyond the aggregation of high-level students in a school or class. One must examine the actual program, whether it functions in regular or special situations, in the light of three major questions :

- a) Does the program provide gifted/talented pupils with learning opportunities which would otherwise be unavailable to them?
- b) Is there theoretical or empirical support for the 'goodness of fit' between the nature of the program and relevant characteristics of the gifted/talented students in the area(s) of the curriculum to which it is applied? and
- c) Does the program accommodate differences in individual interests and learning styles of the students involved?

PROVISION OF LEARNING OPPORTUNITIES NOT NORMALLY AVAILABLE

The determination of whether or not a school or class does, indeed, provide the students with learning experiences they might not otherwise have is the easiest of the three criteria to apply. Nevertheless, this first level of assessment, if systematically applied, might lead either to the abandonment of some existing special programs or to their modification.

Two single sex select entry high schools in Sydney are cases in point. Both of these schools are highly selective (although the boys' school is even more selective than the girls' school) and take pupils from the very top of the distribution of weighted IQ and scholastic aptitude (mathematics

and English) composite scores. Both schools have a long tradition of academic excellence and strong school loyalty. But in neither school was there evidence of academic program opportunities which the students could not have had in any good, comprehensive high school. It is true that in the boys' school some specialist courses are offered, but since neither aptitude for nor interest in these courses is considered in the selection of entrants, these courses appear to serve more as a justification for maintaining a selective school than as special opportunities to develop these talents. The girls' school provides no courses or course sequences unavailable in the comprehensive high schools.

Similarly, a visit to a primary (elementary) school in New South Wales which has Opportunity C classes revealed very little that differentiated the content or mode of instruction in regular sections and C sections at a given grade level. In response to questions about the differences in curriculum between gifted and non-gifted classes, the principal could identify nothing unique about what the gifted pupils were asked to do and saw the major distinction in the different levels of student responses. It was, therefore, unclear why a special class was needed, since gifted children would naturally, or could be encouraged to, make higher level responses to the common content presented in regular, broad-range ability classes.

One must, therefore, ask on what basis the existence of such schools or classes can be justified. Based on American evidence (Abrahamson, 1959; Findlay & Bryan, 1970) one would expect graduates of special high schools to differ little in their academic achievement at the tertiary level from equally able comprehensive school graduates. And similarly, (Goldberg, *et al.*, 1966) one would expect no significant achievement differences between high-ability pupils in special or regular classes in which the same curriculum is followed. Since there is no comparable research available in the Australian context, it could be very instructive to compare the performance of seniors in one or more special schools with equally able students in regular high schools on the common examinations taken at the end of the secondary school. Since the special schools are in New South Wales, one might expect the composite score on the Higher School Certificate to be higher for the selected school graduates, since they would be rated against a higher ability candidature in all their subjects. This difference would need to be controlled in any comparisons. It might also be worthwhile to discover whether more students in the selective schools are enrolled in three or four unit courses than is the case for their ability peers in comprehensive schools. A follow-up into tertiary education would provide further evidence on the differential performance (choice of major, course load, persistence, grade point average, etc.) of selective and comprehensive school graduates of equivalent ability.

A rather different picture was found in a few schools in 1978 and in an increasing number in 1980. In an independent school in Melbourne, an experimental special class was established in the tenth year. Admission was based on teacher recommendations of general aptitude (which were often reluctantly made) and the girls were kept together for all their subjects. What characterised the program was the opportunity for each student to identify an area of special interest in each of the regular subjects and to pursue this interest individually or with one or two classmates. In every subject the students were responsible for covering the required course of study, but since they were generally rapid learners, they could also pursue their own special interests and theoretically, gain additional knowledge, skills or understandings.

More recently, special classes for intellectually gifted children were established in two primary schools in Darwin. In one of these in particular, the curriculum was centred around areas of inquiry and the pupils spent time in independent study, followed by class discussion and critique of the ideas they presented. These activities differed appreciably from those characteristic of regular classes.

In Western Australia a variety of special primary programs has been developed. Some provide extra courses, over and above the regular curriculum, for which gifted children are 'withdrawn' for some part of the day. In one primary school located on a high school campus, sixth and seventh graders may pursue courses independently, at their own rate, under the guidance of a specially assigned teacher and with the help of secondary school specialists. In another situation, children are brought together from several schools one morning a week for instruction in content outside the curriculum. A special interest centre program has been developed in one region of Perth such that each group of primary schools which feeds one of the high schools has access to the centre for about one third of a day per week. Students may go for more advanced work in special aptitude/interest areas or for participation in more general activities around a theme, such as 'The City'.

In Melbourne, there are currently plans afoot to enable selected seventh graders to enter a special program in which they will be able to complete the six-year secondary school program in four years, and either receive tertiary credit for advanced work satisfactorily completed while in high school or go on to tertiary education early. Negotiations with several universities are in progress.

All of these programs meet the first criterion. Each differed considerably from what was available to equally able students in regular classrooms. But the question of the appropriateness of the particular program across the several subjects, remains at issue.

MATCH BETWEEN PROGRAM AND CHARACTERISTICS OF TALENT AREAS

Special programs for the gifted/talented have too often been determined by some set of social or educational beliefs, untested assumptions about the benefits of one or another approach or, simply by expediency. Recently, attempts have been made to analyse some specific talent areas, such as mathematical or verbal talent, and to propose guidelines for the selection of particular kinds of programs in specific fields (Cohn, undated).

The two generic categories under which most curricular adaptations are subsumed are *enrichment* and *acceleration* and the argument as to which is preferable goes back to the 1920s (NSSE Yearbooks, 1920 and 1924). Unfortunately, the terms as used over the years, have had both organisational and curricular connotations, and it is often difficult to keep them apart. Acceleration has usually referred not only to allowing gifted learners to move more rapidly through prescribed subject matter sequences, but has also implied actual placement in a higher grade through grade skipping, double promotions, telescoping three years into two, early admissions to college or, at the other end, early admission to kindergarten.

Enrichment has been used to describe the 'extra' activities which gifted pupils are encouraged to undertake, without moving ahead in the regular subject matter sequences. But the term also implied that such activities could be carried on in the 'regular' classroom. Thus, 'enrichment' was contrasted both with 'acceleration' and with 'ability grouping'. In contrast to the first, it meant two things : a) The special activities of gifted children should be 'horizontal' curricular extensions rather than 'vertical' ones. Programs should not be geared to covering standard material more rapidly, but should, rather, engage talented students in ancillary activities such as wider reading, undertaking special projects, 'researching' topics of interest, etc.; and b) Gifted children should remain in classes with their age mates rather than go into classes for older children.

In contrast to 'ability grouping', enrichment was used to describe special activities for gifted pupils which could be carried on in regular, broad-range ability classes, thus, obviating the need for special schools, classes, or other forms of ability grouping. The following discussion will focus on the curricular differences between the two approaches. Whether either or both of the two kinds of programs can be more effectively carried on in broad or narrow range ability groups raises separate issues which are discussed briefly in the section on organisational alternatives.

The programs briefly described above as well as others seen in Australia offer examples of each of the two approaches. For instance, the Victorian program for seventh through twelfth grade is a clear attempt at developing an accelerated program across all subjects. It is similar in its intent to the two-year SP programs in the New York City junior high schools in which students complete grades seven through nine in two years. The planned academic centres at various Perth high schools which will allow selected students to complete specific courses more rapidly are further examples of accelerated provisions, but within subjects rather than across the board.

In contrast, the Resource Centre Program in Western Australia as well as programs which provide exposure to content which is not a standard part of the curriculum - computers, solar energy, etc. - represent attempts at enrichment. Similarly, the various programs which 'withdraw' selected pupils for some period each day or for one or more times per week for training in 'lateral thinking' or working on 'brain teasers' also represent provisions which do not interfere with the regular classroom curriculum but rather add on activities which are deemed appropriate for gifted children. How might one assess the appropriateness of these two kinds of programs? What is the evidence on the advantages or disadvantages of the two approaches to programming for intellectually gifted children? Are the two modes equally valid at all age levels and in all talent areas?

Because enrichment covers a wide and varied array of activities, frequently only tangentially related to a specific body of content, it does not readily lend itself to study or evaluation. Unfortunately, programs purporting to provide 'enrichment' often have as their only justification filling the time which rapid learners normally have left after finishing the required work. Such activities as doing more problems (occasionally more difficult ones but too often at the same level as those in the assignment), running errands or doing classroom chores, helping slower children, engaging in 'free' reading, or drawing or some other activity of their choice, have been frequently observed. Such activities may be rationalised as valuable in developing good work habits, creative expression or attitudes of helpfulness. But there is neither evidence that any such outcomes actually result nor any sound argument that the activities are more necessary or even desirable for gifted pupils than for the generality.

But enrichment can encompass more meaningful activities such as utilizing original source materials in the study of history, reading many of the works of an author who is represented in class by a single book, designing and carrying out experiments in the physical or social sciences or pursuing topics of special interest related either to the material studied in class or to content not a part of the regular course.

However, the value of such activities is difficult to ascertain. The additional learnings which might accrue from them are not assessed by standardised tests or other general assessment techniques. And, as before, the question of whether such activities are uniquely appropriate for intellectually gifted learners, remains open.

It is equally difficult to determine whether such 'enrichment' programs have negative effects and what these might be. There are reports of gifted children who resent the imposition of 'extra work', but this is more often true when such work fails to engage their interest. Perhaps the most cogent objection is to the frequently haphazard, unsystematic nature of the activities comprising 'enrichment' and their failure to add up to a cohesive program. Valuable as some of the activities may be in some subject areas, there is considerable question as to their value in others. Furthermore, gifted children often opt to pursue topics of interest for which they as yet lack the requisite knowledge or skills and are frustrated in their attempts.

On the other hand, the available research yields a large and consistent body of findings on the positive outcomes associated with all forms of acceleration (Fund for the Advancement of Education, 1957; Goldberg, 1965; Pressy, 1962; Shannon, 1957; Stanley, 1976b).

Whether accomplished through early admission to kindergarten, grade skipping or telescoping, early admission to college, or admission with advanced standing, the evidence consistently shows that accelerated students benefit academically and do not suffer any social or emotional handicaps. Furthermore, in the light of Lehman's work (1953) which demonstrated that, in most fields, the greatest original accomplishments occur at relatively early ages (in mathematics and physical science during the third decade of life), acceleration acts to shorten the educational apprenticeship of the potentially innovative contributors and enables them to go on to independent, creative efforts during the optimal period. Thus, acceleration appears to raise the level of educational challenge, requires little in additional expenditures, apparently has few negative effects on the students and, from Lehman's (1953) studies, may have a significant societal payoff.

Why then, is acceleration not the generally preferred mode of providing for gifted/talented children, as it was in the United States from the 1870s through the 1930s? Why do so many schools favour the poorly conceptualised, often haphazard practices subsumed under enrichment?

Several reasons may be speculatively advanced. In the first place, despite the research evidence, parents are worried about possible negative social and emotional effects. In addition, as child-rearing practices became increasingly

'permissive' (Bronfenbrenner, 1958) parents shied away from making excessive demands on their children and saw acceleration as unwarranted 'pushing'. Academic concerns also entered the picture. There was a strong belief, based on personal experience or anecdotal information, that grade skipping would result in serious academic lacunae which would never be made up and which would interfere with later learning. People often report that they themselves or someone they know 'never learned to do long-division' (or its equivalent) because he or she skipped fifth grade! Perhaps discomfort with overtly recognised precocity also plays a part in parental opposition to acceleration. Some parents view precocity not only as a deviation from the norm, but as abnormal. Despite five decades of research to the contrary, some still believe the negative stereotypes often associated with precocity and fear that acceleration will exacerbate the unsavoury image.

Elementary teachers also share many of the concerns of the parents. They often oppose 'pushing' as detrimental to the 'well-rounded' development of the child. They believe that there are valuable learnings in school, other than academic, which are best achieved among one's age mates. Some may also resent losing their 'star' pupils if they are docile and conforming, or rewarding them if they are 'arrogant' or difficult to deal with. Secondary schools have few objections to introducing advanced placement courses but resent sending their brightest pupils on to college a year early, thus depleting the senior class of its most able members.

A rather different argument, not derived from self-interest or from unwarranted anxiety or stereotypic thinking, against moving able learners to higher grades contends that the ever increasing amount of knowledge to which gifted young people could profitably be exposed is already well beyond what the K-12 school years will allow. Why, then, should the number of years of schooling be curtailed even further for the very few pupils who could learn far more than they are currently taught? Why not, instead, teach more during the available time?

It is the last consideration, in particular, which has led to a reconceptualisation of acceleration from one of providing the gifted individual with less educational time in which to cover a set body of content to one of increasing the teaching pace so that more and more advanced content might be covered in the normal amount of time.

Furthermore, such accelerative programs as grade skipping or telescoping, especially at the elementary or junior high school levels, move the student ahead equally in all subjects. This practice assumed that because a child is intellectually gifted, he/she is equally advanced in all areas - an assumption not supported by the evidence, especially beyond the elementary grades.

The current status of the two acceleration programs initiated by The Fund for the Advancement of Education represents a case in point. The first of the programs, 'Early Admission to College', begun in 1951, is currently, despite generally favourable evaluations (The Fund, 1957; Pallett, 1972), far less widespread than the Advanced Placement program which was begun in 1952. Only about one in five colleges accepts some early admittees, before they have graduated from high school (Whitlock, 1974). But almost 1,600 colleges give advanced standing credit based on the Advanced Placement Examinations. In 1976, some 75,000 students in almost 4,000 schools took 99,000 examinations (Gold, Milton, 1979). But while the program was initially intended to shorten the period of college attendance for the most able students, it now appears that most Advanced Placement students use their exemptions in order to take extra credits and to do additional advanced work (Gold, Milton, 1979).

Although the current view emphasises the acceleration of content rather than the acceleration of the student and consequent curtailment of the years of schooling, there are situations in which actually moving a very gifted learner to a considerably higher academic grade may be desirable. The work of the Study of Mathematically Precocious Youth (SMPY) provides such examples. Some of the seventh and eighth grade students selected for the SMPY program were at the extreme upper end of the distribution of mathematical ability and evidenced mathematical knowledge equivalent to college freshmen. Few if any of the junior high schools which these twelve and thirteen year-olds attend are equipped to offer them the work for which they are ready. And even the high school mathematics programs are sometimes below their level of competence. While for the majority of the selected and interested students SMPY offered fast-paced, intensive after-school, summer or Saturday courses on the Johns Hopkins campus, in a few individual cases, where the evidence warranted, junior high school or early senior high school-age boys were admitted as freshmen to Johns Hopkins University and have been highly successful (Stanley, 1977).

In such cases, the response to the question, "Why push them out of school earlier?", is that these young people continue on to more advanced academic levels and spend much of the time they save by omitting lower grades in pursuing graduate study and, thus, completing their formal education early enough to go on to independent productive work in their early twenties.

Does the above discussion suggest that acceleration is always the most appropriate mode of educating gifted/talented students? If acceleration is defined as more rapid coverage of a body of subject matter, then it is probably most appropriate in what Keating (1979) calls "closed systems of knowledge - in which a more linear, step-by-step learning progression is possible without the addition of outside life experience"

(p.190). Such fields as mathematics and the physical sciences fit this designation. In these disciplines (especially in mathematics) the material is linearly organised in a series of hierarchies, and mastery of more advanced concepts depends upon mastery of lower level concepts and only minimally on the individual's social or emotional maturity. Thus, for the mathematically talented, "progression vertically into more difficult material, for which the current learning is the groundwork, is needed to meet the ... criterion of challenging, novel and educationally relevant work" (p.190).

In areas like literature, history, creative or expository writing, where there is no apparent linear progression of content, and where the level of comprehension may be related to extended 'life experience', broadening the scope of offerings horizontally may be more appropriate. Keating (1979) contrasts the two modes by suggesting that "...reading several of Shakespeare's plays rather than one is quite different from solving fifty simultaneous equations rather than thirty" (p.191). For the verbally talented student interested in literature, reading widely could be truly enriching; for the gifted mathematics student, additional practice in applying concepts which have already been mastered, becomes boring and may well lead to a loss of interest.

How does the designation 'closed' or 'open' fit talent areas other than the academic? There is currently little information available on what would constitute the most effective approach to programming for talented students in music, art, drama, or dance and even less is known about a field such as 'social leadership'.

On the face of it, one would tend to place mastery of a musical instrument among the 'closed' knowledge systems. Like mathematics, it requires special instruction in processes before actual performance can take place. The existence of musical child prodigees suggests that the acquisition of a high level of technical skill is independent of extended life experience (although fine musical interpretation may be contingent on emotional and musical maturity) and the technical skills are in large measure hierarchically organised. Because of the skill components, mastery at a given level may require more practice in music than is true for mathematics. Nevertheless, it would not be very useful for the talented performer to devote his time to playing large numbers of 'simple' pieces when he is capable of acquiring the musical concepts and instrumental skills involved in more complex and demanding music.

In the fine arts and drama, the situation may be quite different. These are areas in which even very young talented children may engage in 'self-taught' activities; there is no agreed upon linear hierarchy of steps and, indeed, the

quality of performance may be contingent on maturity. And yet, even in these fields, attempts have been made to set up instructional sequences. The art program at a Perth senior high school with a special art centre provides an example of such an attempt. The art course is divided into a series of ostensibly sequential units and the students must complete all the requirements of one before going on to the next. Although the art teacher believed that the content was organised along a continuum of difficulty, the one discernable difference was in the nature of the media used, since making collages preceded the use of tempera paints which, in turn, came before water colours or oil paints. It appeared to me that the imposition of a hierarchical structure on the art program served better to lend 'respectability' to the art curriculum as a sequential, graded set of learnings (and, therefore, a subject which should be accepted toward matriculation) than it served the interests of the selected talented art students.

In the field of dance, where there generally is a set of specific skills of increasing difficulty to be learned, acceleration in the sequence seems reasonable, even though here, as in music, effective interpretation may be a function of increasing 'life experience'. In drama, on the other hand, where there is no clearly defined sequence of skills to be mastered, the talented students would probably be best served by a program which involves them in playing many parts, engaging in improvisations and interpretations at their own level of sophistication and modifying their performance on the basis of feedback.

The above discussion defined acceleration as the more-rapid-than-normal progress through a hierarchically organised body of knowledge and considered its applicability to several major talent areas. But there is another sense in which acceleration can be conceptualised, that is, in terms of the thinking processes and performance skills required of the student rather than the level of the material with which the student deals. Such a conception of acceleration would imply that only those activities are appropriate for gifted/talented students which require them to demonstrate a level of performance beyond that of the generality of their age mates. From this point of view, Bereiter's (1976) suggestion that for verbally gifted students *To kill a mocking bird* and *Julius Caesar* are worth reading, even by children who have already read them or comparable works..." (p.313) would need to be qualified. While the particular book selected need not, necessarily, be more difficult, the work that gifted students should be expected to perform with what they read - the critical analyses, the comparisons with other works on related topics, or the grasp of implicit meanings - would have to require more advanced and/or more original thinking than one would assign to less verbally talented youth.

From this perspective, the question to answer in judging the appropriateness of a program for talented students would be : "to what extent are the students required to work at more advanced intellectual, creative or skill levels?" Beyond that, the particular mode of programming would depend upon the nature of the particular field of study. The question is relatively easy to answer in the affirmative where students move rapidly to more advanced levels in hierarchically and sequentially ordered subjects, such as mathematics. It is more difficult to answer in the 'open' fields since the answer depends not so much on the level of the content as it does on the demands made on the student in dealing with the content. Working through more advanced content is self-justified in terms of 'functioning at a higher level'. But, activities often embraced by the term 'enrichment' need to be justified as appropriate for talented students by presenting evidence that they do, indeed, require engagement in more advanced cognitive and/or skill performance. The application of such a criterion might lead to a long overdue re-examination of much of what currently goes on under the heading of enrichment.

ACCOMMODATING PROGRAMS TO INDIVIDUAL DIFFERENCES

But no matter how well a program may appear to fit the subject area in which it operates, or how well it meets the requirements of engaging students in activities at higher cognitive or performance levels, to be judged appropriate it must also be sufficiently flexible to allow for differences in interests, motivations and learning styles among the talented. An experimental program at the University of Chicago Laboratory School (Thelen, 1967) provides an apt example. Six outstanding sixth grade achievers were released from their regular school work during the last month of school to investigate a subject of their choice (and their teacher's approval) independently. Three of the students turned out original, worthwhile work and found the experience highly rewarding. The other three, equally bright and academically successful students did not do too well. It turned out that two of the students in particular, needed a group setting in order to be productive. They found the demand for isolated work frustrating and could not produce.

Other examples came from the Study of Mathematically Precocious Youth project where seventh and eighth grade boys and girls who scored at or above the average for twelfth graders on the SAT-M were invited to join a special accelerated class. Although all those who accepted the invitation demonstrated high mathematics ability, there were marked individual differences in the responses to the very fast pace set for the class (George & Denham, 1976) and there were sex differences in both success and persistence in the program (Fox, 1976).

To accommodate differences in pace (after all, the students had completed Algebra III), it was decided to split the class into two sections for plane geometry. In one of the sections, the students "were given more individual attention and a more detailed approach" (George & Denham, 1967, p.123) with greater emphasis on identifying an appropriate line of attack and on techniques which would aid in problem solution.

Observed sex differences in the success of the program to accelerate mathematical achievement led to a series of interviews, class observation and parental reports. From these data two explanations were generated (Fox, 1976).

The first was that the course, taught by a male ex-physicist, was very theoretical in orientation, but the girls were social by nature. They did not find the atmosphere of the classroom or the requirements of considerable independent study to their liking. Second, there was no attempt in the program to emphasise the relevance of mathematical study to their educational and career goals - most of the girls simply did not see the value of becoming accelerated in their mathematics education. (p.188)

As a result of these findings, a special program was developed for girls. The pace was somewhat slowed, but more important were the attempts to provide greater social stimulation. The girls were taught by female teachers; instruction was very informal and carried out in small groups or individually; "co-operative rather than competitive activities were stressed" (Fox, 1976, p.188); and whenever appropriate, the teachers pointed to ways in which mathematics could be used to solve social problems. In addition, both male and female speakers met with the girls to discuss career possibilities in which mathematics plays an important role. Evaluation of the special girls' class found that a larger proportion of the invited mathematically talented girls accepted membership and persisted in the class than was true for the mixed sex class. However, achievement differences were slight.

It is possible that some highly talented students are not temperamentally suited to programs which emphasise increased pace, and may fare better where they can work at a high level through long-term undertakings without competing against a set of norms or deadlines. For such pupils, accelerated subject matter coverage may not be effective. Even within a particular talent area interests, career goals, basic value orientations, cognitive styles and varying needs for social interaction may be crucial elements to consider in planning optimum curricula for talented individuals. Even totally individualised instruction may not be a panacea if it requires the student to work through a set book, workbook or programmed text albeit at his or her own pace. Many gifted learners need

the stimulation of their classmates, access to a teacher and, frequently, a learning sequence quite different from that which is provided by available programmed materials.

Current approaches to special programs for gifted/talented students emphasise the crucial importance of the content to which they are exposed and the cognitive, artistic or skill levels at which they perform. Whether students are enabled to move at a more rapid pace through a body of knowledge or are given opportunities to expand their understandings, engage in more 'practice' or explore topics of special interest depends on the nature of the field in which their talents lie. But whatever the activities in which talented students are encouraged to engage, to be appropriate for such students, they must tap the very characteristics which led to the students' identification as talented. The courses of study must engage the students in performance at a higher intellectual or creative level than would be expected of the generality. And no matter how appropriate the content may be to the field of talent or the instructional mode to the high abilities of the students, effective programs need to be flexible enough to accommodate individual differences in motivation, interests and learning styles.

ORGANISATIONAL ALTERNATIVES FOR CONTENT DEVELOPMENT AND DELIVERY

Once there is clear recognition that the crux of any program for the talented lies in the development of appropriate and flexible content and instructional modes, two major questions must be addressed : a) how and by whom can such instructional content and procedure be developed? and b) which organisational patterns will be most effective for instruction?

DEVELOPING APPROPRIATE CONTENT

In describing his experiences in evaluating programs for the gifted, Renzulli (1973) stated,

...I have witnessed far too many programs that are essentially collections of fun-and-games activities; such activities lack continuity and show little evidence of developing in a systematic fashion the mental processes that led these children to be identified as gifted. (As reported in Gallagher, 1979, p.32.)

Gallagher (1979) urges "the development of more complex curriculum units and materials ... based upon advanced conceptualisation of a subject ..." (p.32). But he recognises that such co-ordinated curriculum efforts "are more easily discussed than created and at the present time there are few visible attempts to generate differentiated curriculum in the content fields" (p.32-33). Despite many worthwhile suggestions regarding curriculum development,

it is clear that the educational practitioner who must provide direct service to gifted students is essentially entering a difficult instructional situation almost totally unarmed, because there are few, if any, organised curriculum resources to draw upon. (p.33)

Although in subjects which have a clear, hierarchical sequence through which gifted pupils can move more rapidly, the problem is lessened, it is still not solved. As noted earlier, while such procedures may accommodate individual differences in pace, they often fail to take cognisance of differences in learning styles. But in talent areas where more rapid coverage of a sequenced course of study may not be the most appropriate form of education for gifted learners, there is very little help available to teachers.

Several alternatives have been proposed for providing the needed help in content development. A rather elaborate plan was proposed by Cohn (undated). It involved the creation of a series of Institutes for Facilitating Talented Youths (IFTY), one in each field of talent. One of the major functions of such institutes would be to co-ordinate the efforts of specialists in measurement, content and method, child development and other relevant specialities toward producing a variety of validated curricular materials in each particular field, determining optimum periods for identifying the talented and matching the nature of the program to the children's developmental level. Such institutes could be created on regional, state or local levels. They would be equipped to gather evidence on the effectiveness of various approaches and to assist schools in planning their efforts for talented pupils. The various institutes could also, as appropriate, engage in co-ordinating efforts across disciplines and help schools plan simultaneously for various talents.

Less elaborate plans have also been proposed. For example, Gallagher (1979) discusses the establishment of a unit to offer "a continuing program of technical assistance which would provide help on a variety of needs, such as special curricula and the design and execution of evaluation programs..." (p.43). In addition, Gallagher emphasises the need for an ongoing in-service program for upgrading teachers' skill and knowledge, the appointment of a local staff person to a leadership position responsible for program development, in-service co-ordination and bringing to the local school system the best that is known about education in various talent fields; and the participation of teachers (especially resource teachers) in developing and testing curricular units.

Another approach might be modelled on the United States Federally supported curriculum development projects of the late 1950s and early 1960s, such as SMSG, BSCS or SCIS¹. In such a plan, a group of practitioners and/or scholars in a given discipline would meet together with selected teachers to develop content materials specifically for the talented in their field of expertise. The presence of psychologists on such teams could help insure the flexibility of offerings and instructional modes and their appropriate timing, and a sociologist or anthropologist could make the team alert to the multicultural possibilities in program development.

A step in this direction was taken in 1959-60 when under the leadership of Charles E. Bish and sponsored by the National Education Association Project on the Academically Talented Student, a series of two or three day meetings of secondary school and college teachers was held in each of six subject areas : mathematics, science, English, social studies, art and music. The conferences resulted in a series of booklets which provide guidelines for program development in each of the fields (Donaldson, 1959; Hartshorn, 1960; Hlavaty, 1959; Jewett, 1960; Klein, 1960; Ziegfeld, 1961). Additional pamphlets in the series dealt with guidance, administration, elementary school programs, and research related to the academically talented student. Unfortunately, the suggested content was not developed into prototype curricular units or instructional sequences and, because of the swing in national commitment away from the gifted/talented, the many excellent suggestions in the booklets were not developed for school use. These efforts from the last decade, expanded and updated, could form a useful basis for curriculum development in the United States at a Federal, State or local level and might also act as a starting point for United States - Australian cross-national efforts at designing and creating materials for use with talented students.

ORGANISATION FOR INSTRUCTION

The literature on the gifted is top-heavy with research reports, discussions, exhortations and descriptions of administrative procedures for organising instruction. As noted earlier, most of this literature has been characterised by a lack of concern for the content to be 'delivered', often leaving the impression that it is the mode of organisation which represents 'the program' for the talented. Since attitudes toward organising instruction for the talented reflect some basic socio-political beliefs and commitments, more energy has been expended on arguing whether, for example,

1. Assumed to be School Mathematics Study Group, Biological Sciences Curriculum Study, Science Curriculum Improvement Study (ed.).

talented children should be placed in special groups for instruction or be taught in regular classes, than on determining what they should be taught in either situation.

Decisions about organising the settings in which gifted/talented children learn must address several questions :

- a) which organisational modes would prove most efficient and effective for 'delivering' particular kinds of content?;
- b) how well does any particular mode accommodate individual learning needs, styles and motivations of the students?;
- c) how appropriate is a particular mode to the age of most of the pupils involved and what is the basis for such a determination?;
- d) are there any anticipated negative outcomes (educational, psychological or social) associated with particular organisational modes?;
- e) what are the attitudes of the community to various administrative arrangements? and
- f) are there sufficient financial and human resources to support a particular pattern of organisation?

Using such questions as a guide could help to examine various alternative organisational patterns and to develop a sound rationale for using one form rather than another or for combining several.

There is a great variety of possible learning settings for gifted/talented students. These include separate schools, special self-contained classes, special classes for particular subjects, grouping within a normal classroom, resource centres to which students go for instruction in one or more areas, before and after school classes, individual or small group tutorials, Saturday and/or Sunday classes, individual class attendance at higher instructional levels (for all or some subjects), individualised study through programmed materials, summer programs, internships, and probably others.

Furthermore, instruction can take place in the school, totally under school auspices, or it can also take place under joint auspices of the school and museums, laboratories, centres for the performing arts, dance or drama studios, college campuses, industrial or business enterprises, or any other appropriate setting.

Each of the organisational patterns is currently in use somewhere in the United States. In most cases, programs are locally planned and supported; in others, they may be state-wide, such as the Governor's Schools summer programs (Ward, 1979), or under the auspices of a funded project, such as the Study of Mathematically Precocious Youth (Stanley, 1976b). And although most programs are located in schools or under the sole auspices of the school, there are examples of joint efforts utilising non-school settings and personnel (Gold, Marvin, 1979).

But regardless of the organisational patterns that are decided upon or how appropriate the rationale for their choice, they must be meshed with the regular program of the school so as not to cause serious dislocations and above all, to insure that when gifted students attend their regular classes, they will not suffer the boredom of duplicating what they have already learned in the special settings.

Learning how most effectively to match the learning settings to the nature of the special content, to the age of the learners, to the individual variations among talented students, to the values and beliefs of the community and to the practicalities of available resources will require considerable support for school experimentation and evaluation and a far greater emphasis on and support for research than is currently the case either in the United States or in Australia. In each of these areas common cross-national efforts would not only be possible but highly desirable.

STAFFING PROGRAMS FOR THE GIFTED/TALENTED

WHO SHOULD TEACH THE GIFTED/TALENTED?

This question has appeared regularly in all discussions of educating high-ability students. Responses to the question generally resemble catalogues of all desirable characteristics. One such composite portrait (Passow, *et al.*, 1955), gathered from the literature and proposed by the authors as a basis for further research, included : high intelligence, special aptitudes, knowledge of own field, broad knowledge of related fields, productivity in a creative area, sensitivity to creative expression of students, flexibility of standards - not a perfectionist, acceptance of differences and original ideas, warmth and friendliness toward students. In addition, such characteristics as acceptance of nonconformity, the ability to inspire the students to strive for higher levels of achievement, being a person of very few prejudices and being a sufficiently integrated member of the community to have ready access to its resources were also included. Furthermore, the teacher must be aware of and freely admit his or her own limitations and must, above all, have positive attitudes toward the talented, enjoy teaching them and remain unthreatened by their superior ability.

In presenting the above 'shopping list' of characteristics, Passow, *et al.* (1955) raised the question, "To what extent does each of the following characteristics seem to be important in determining who should teach the talented in each area?" (p.58). They might have also asked which of the characteristics, if any, differentiates the good teacher of the generality from the good teacher of the gifted/talented?

Unfortunately, the research challenge implied by the question raised in 1955 found few takers. In summarising the current evidence on the characteristics of successful teachers of gifted/talented students (determined either by 'experts' or by students), Marvin Gold (1979) concludes that "more research and less opinion about the characteristics of teachers of the gifted are clearly needed" (p.279). One survey of 'expert' opinions (Advocate Survey, 1971) asked over 200 experts on the education of the gifted to rank order the importance of thirteen characteristics for selecting teachers of gifted/talented children. In a few cases, these experts differentiated between gifted and talented pupils in their ranking. While 'proven teaching ability' ranked first or second for both categories of pupils, for the 'gifted' flexibility and open-mindedness ranked second, for the talented it ranked sixth; competence in a specified skill ranked first for the talented, twelfth for the gifted (this may have been due to identifying specified skills as art and music). But, by and large, the same characteristics were placed in the top half of the rank-order distribution for both groups and the characteristics with the high rankings, once again, describe the generally 'good teacher'. In another study (Bishop, 1968), teachers nominated as 'most successful' by a group of high ability high school students were compared to a random selection of teachers, who had taught these same students, on a variety of characteristics. The teachers deemed 'most successful' were significantly more mature, higher in intelligence (mean IQ = 128), had stronger intellectual interests, a higher need for achievement and more often viewed teaching as intellectually stimulating. They were well versed on their subject, student-centred in their teaching, and positively oriented toward their students. Finally, as a group, they were more favourable toward special provisions for the gifted.

While such traits may distinguish between teachers of gifted who are viewed as more or less successful by their students, it is still not known whether the presence of all these desirable traits is necessary or what degree of superiority on each of the traits is required for 'success'. Furthermore, these teachers were identified as 'successful' by academically gifted secondary school students. Would the same categories of differences emerge in comparisons among more and less successful elementary school teachers of the gifted or of teachers in the several arts areas? One further wonders whether teachers selected as 'most successful' by the generality of students might not excel on many of the same characteristics.

As long as there is no clear evidence on the characteristics which distinguish the successful teacher of the gifted or talented from the generally successful teacher, arguments concerning who should teach the gifted/talented will continue. One can take the position that bright, enthusiastic, student-centred and inspiring teachers are more essential for groups of students who find learning difficult, are poorly motivated,

or place low value on educational achievement than they are for the gifted. And, in view of the paucity of teachers who fit the portrait which emerges in the Bishop (1968) study, it is often argued that assigning them to gifted pupils short-changes the rest of the school population and provides further evidence of 'giving more to those who have'.

The same argument is less likely to be made in special talent fields. Few would contend that a great violinist is as necessary to teach the non-talented in music as he or she is to teach the talented. In fact, a high level of attainment in a given field may compensate for a lack of teaching experience or warmth or other traits deemed desirable when outstanding students are involved, but may have a negative effect on less talented learners. Far more needs to be known about the effects of differentiated constellations of teacher characteristics on pupils with diverse talents, varying levels of ability within a talent field and individual learning styles before the issues relating to teacher selection can be resolved.

In a number of United States schools which have special classes for gifted/talented students, teachers are assigned on a rotating basis. Although only those teachers who want such an assignment are placed with such classes, some of them have little understanding of or liking for gifted pupils and volunteer because such assignments are considered prestigious or because they think it will require less work and/or easier discipline. But in the absence of either credentials or criteria by which to determine who should be eligible, school administrators must rely either on volunteers or on some set of unvalidated criteria.

Specialists, who do not hold teaching certificates and would be ineligible to teach in regular programs, have from time to time been recruited to teach the talented. As described earlier, the Music Centre in Adelaide uses adjunct personnel from the field; similarly, the Study of Mathematically Precocious Youth project uses college-level personnel to work with the mathematically precocious children. The use of mentors (Gold, Marvin, 1979) from out-of-school settings and the recruitment of special lecturers as seen in a number of the 'partial withdrawal' programs in Western Australia or the learning centres established in several South Australian primary and junior high schools are further examples of bringing to gifted/talented children individuals who not only can share their special knowledge or skill with the children, but can also act as models for future high-level performers in a given field.

The use of instructional personnel outside the teacher corps, while intrinsically valuable and not particularly controversial, does not solve the problem of teacher selection. Teachers must still carry a large part of the instructional

responsibility, and their abilities and commitments may be crucial to the development of the talented. Writing almost forty years ago, Lorge and Blau (1941) contended that the courses a child takes are of secondary importance to the teacher with whom he learns. There has been no evidence since that time to question their contention.

STAFF MOBILITY AND PROGRAM STABILITY

But there are other problems associated with staffing programs for the talented which derive from administrative arrangements, personnel practices, or geographic mobility. In 1954, the newly organised Talented Youth Project at Teachers College, Columbia University, sent inquiries to a long list of schools which had been cited by Witty (1951) as examples of special programs for the gifted. The great majority of responses indicated that while Ms. Jones or Mr. Smith were in the school, there had been a special program, but he or she had since left and the program was no longer in operation. Responses to a follow-up letter to the teachers in their current locations (where such information was available) generally confirmed that the teachers had been involved in special programs in their previous schools but that the new situation was either not conducive to such programs or they had been 'promoted' and were no longer teaching or that other special responsibilities now absorbed their time and interest. It became very clear that the stability of programs for the gifted depend, in large measure, on the stability of the teaching staff.

There are two universal causes for teacher mobility - promotion to supervisory or administrative positions (which are better paid and more prestigious) and relocation due to demographic changes or to personal needs or desires. But in Australia, the problem is exacerbated by the combination of a 'seniority' system and a system of 'grading' in schools. It is not very clear to me just how the system works. But in school after school I was informed that several teachers would be moving to larger or more desirable (?) schools the following year, among them teachers who were heading the special programs in mathematics, music, art or ballet. Such a system militates against the establishment of stable programs for the talented in schools which are at the lower end of the schools hierarchy. In several schools the teachers bemoaned the fact that, when they leave, the special program might be discontinued. This is especially true where much of the special education takes place before and after school and it is not easy to find teachers who are willing to meet such schedules.

As I understand it, this mobility system exists in response to demands on the part of the Teachers' Federation to provide for a more equitable form of staff assignment than might otherwise be true. But until some adjustments are made to insure the continuity of at least some portion of the staff

which works with gifted/talented students in a given school, the stability of programs will remain in jeopardy.

The placement of the education of gifted children in Special Interest Centres rather than in individual schools, as suggested by the Schools Commission in the report of the Australian Education Council (1977), or as currently carried out in the Resource Centre program in one region of Perth may provide a partial solution to the problem of teacher mobility. Such centres would probably make greater use of non-school specialists than can be achieved in regular schools and, conceivably, such centres might be placed high enough on the hierarchy to allow excellent teachers to remain in their positions for longer periods of time.

TEACHER PREPARATION AND CERTIFICATION

In the United States, most states require special preparation for teachers who will teach 'exceptional children'. In some institutions, such programs include a unit or perhaps only one course on the gifted, in others, little special attention is paid to the upper levels of exceptionality. In fact, Marvin Gold (1979) reports that a search of college catalogues plus extensive personal communications turned up only three undergraduate institutions which had a special program to train teachers of the gifted. At the graduate level, a recent survey (N/S-LTI Bulletin, 1976) found that only some thirty institutions offer teacher preparation programs in the education of the gifted at the Masters level and only about ten offer Ph.D. programs. In fact, about 60 per cent of the States have no sequential degree program in this area at any level.

These statistics reflect the lack of agreement about whether special training is necessary for teachers to teach gifted students, and, in fact, whether such a concept has meaning. Both from the perspective of diverse talents and from the perspective of multiple learning settings it is difficult to conceptualise a meaningful program for training teachers. It is, therefore, not surprising that only four States have some form of certification for teachers of the gifted and there is considerable controversy surrounding the desirability of requiring a special certificate in this area. Gallagher (1974) estimated that over 40,000 teachers and about 5,000 supervisors are needed to serve all the gifted students between the ages of five and seventeen (over 1,000,000). This estimate assumes that all the gifted students will be grouped in classes of about twenty-five and will be serviced by a teacher. But many highly able pupils may not be members of special classes and may be dependant upon regular class teachers to plan and carry out special programs for them. As a result, many more than 40,000 teachers will need to have some expertise in teaching gifted students.

It is, thus, not surprising, that the emphasis has been placed on in-service assistance to teachers, rather than on pre-service preparation. Workshops, special short-term classes and study groups, attendance at conventions or institutes, observations of master teachers and informal exchanges on the local level have been used for this purpose. Most such efforts remain unevaluated so that it is not possible to assess their effectiveness. While there is increasing commitment to providing teachers with some systematic assistance in working with gifted/talented students, problems of organising and funding such in-service programs persist.

In Australia there is growing evidence of both pre-service and in-service education of teachers interested in teaching gifted children. In South Australia, as noted earlier, the 'Adaptive Education' plan provides for a semester or a year of release time for selected classroom teachers to attend full-time at a tertiary institution for the purpose of acquiring competence in identifying and planning educational programs for all students with special needs, including the 'more able'. When such teachers return to their sending schools they become resource teachers. Their main task is to assist regular classroom teachers to work more effectively with 'special' students. And, where schedules allow, the resource teachers may work directly for limited periods of time with children identified as 'more able'. In addition, one of the Colleges of Advanced Education in South Australia provides an eighteen week unit on educating gifted children as part of its regular teaching preparation program. This material is also available in the form of a correspondence course, and in 1980 it had been subscribed to by almost 200 teachers throughout the state.

Various short-term in-service workshops on the gifted, in general, or on the talented in specific subjects, have been in operation in Victoria, South Australia and Western Australia and are currently being developed in New South Wales.

At Monash University (Victoria), the teacher preparation program in special education has for some years included an emphasis on the gifted.

At the University of Western Australia, a nascent program in the preparation of teachers of the gifted is currently being expanded. Furthermore, current plans for involving prospective teachers in research on learning styles of gifted students with a special focus on gifted learners from disadvantaged backgrounds, will add another significant dimension to the preparation of teachers of gifted learners from diverse backgrounds. In addition, the University of Western Australia now has a Masters level program in the area of gifted education, which is expected to expand in the coming year.

SUMMARY OF ISSUES AND RELATED QUESTIONS :
SOME POSSIBLE ITEMS FOR AN AGENDA OF CROSS-NATIONAL RESEARCH

The foregoing discussion focussed on several major issues related to policies and practices in educating gifted/talented children and youth. There are, of course, other issues not discussed in this paper, which will have to be dealt with as educational planning for high-ability students proceeds. Some of these are basically socio-psychological, such as the age at which talented children should be identified and given special instruction, the role of the school in dealing with 'underachievement', or the relationship between cognitive and affective variables of the fruition of talent.

Other issues can be described as organisational such as the articulation of programs across various educational levels, the effect of higher (tertiary) education admission requirements on student participation in various special programs at the secondary level, or the degree to which such programs should be ancillary to or integrated into the regular curriculum.

A third set of issues which was not dealt with, except in passing, are financial in nature. In both countries the funding of special programs and of the support services which they require, involves at least some expenditure beyond the usual per pupil costs. Who should provide these funds? What priority in the general educational budget should such special expenditures have? Can analyses of the relative educational effectiveness and cost efficiency of various proposed programs aid in the selection of one type of program rather than another? All of these are at issue in both countries.

Many of the questions not directly discussed in this paper will, per force, enter into the process of reaching some resolution on the issues with which the paper does deal.

Throughout the discussion, possibilities for cross-national studies were suggested. What follows is a series of questions which grow out of the issues raised by the paper, some of which, I believe, can profitably be approached through collaborative discussion and research. No attempt will be made to order the importance of the questions - that might be a first step in a collaborative effort. The questions will follow the order of the discussion in the body of the paper and will be organised under brief summary statements.

1. *Support for Research on the Gifted/Talented*

Currently, neither country has provided adequate funding for research.

- a. What are the reasons for neglecting this area?

- b. What might be the long-term effects of curtailed research support, on both ongoing programs and future efforts?
- c. Could cross-national study groups have an impact on research policy in the two countries by delineating the areas in which crucial information is lacking for building educational programs?

2. *Ambivalent Attitudes*

In both countries there are conflicting attitudes toward providing special education for the gifted. These reflect the uneasy coexistence of beliefs in excellence, on the one hand, and egalitarianism, on the other, both of which are rooted in the political values of the two democracies.

- a. Is opposition to special educational provisions equal across all talent fields?
 - (i) If not, what accounts for the differences?
 - (ii) Are the same fields of talent accepted/rejected in the two countries?
 - (iii) Is opposition general, across all administrative arrangements, or specific to special schools, classes or other forms of ability grouping?
- b. Historically, what are the socio-political events which have been associated with shifts in the prepotency of one set of values over the other?
 - (i) Have similar shifts in 'external' and 'internal' threats affected attitudes toward the gifted in the two countries?
- c. Which pressure groups are currently actively supporting or opposing special provisions for the gifted/talented? Are they similar in the two countries?
- d. Are there examples in the two countries of special programs which have withstood shifting political or value commitments?
 - (i) If yes, what accounts for their stability?
 - (ii) Has it been easier to maintain stable programs at the secondary level than at the elementary level?
- e. Is there evidence to justify the fears that gifted children who receive special attention will develop snobbish or 'elitist' attitudes and/or suffer social rejection by their non-gifted peers?

(Data collected in answer to the above question can provide a much needed base from which to reconcile ambivalent attitudes toward educating gifted/talented young people.)

3. *Determining Talent Areas*

The operative United States definition of talent includes outstanding performance in a variety of academic and non-academic domains. Some of these are clearly defined, others are rather nebulous and their operational parameters are unspecified. Since the talent areas considered for inclusion in Australia are very similar, cross-national efforts at researching and specifying various talent fields could prove highly productive.

- a. What rationale might be developed for selecting the fields of endeavour in which outstanding performance should be considered talent?
- b. Assuming that a consensus can be reached on the fields to be included, should all such fields receive equal support or should some areas have priority over others?
 - (i) On what basis should such priorities be established?
 - (ii) Are there safeguards which might be established to insure that a long-range view of societal needs rather than immediate expediency will dictate the allocation of funds and services?
- c. Recognising the inadequacy of a single IQ score for identifying specific talents, what functions does intelligence testing have?
 - (i) Are these functions similar across grade levels?
 - (ii) Does high ability in any of the academic disciplines occur in the absence of high general intelligence?
- d. Is creativity, like general intelligence, a pervasive quality of thinking, or is effective creative performance tied to the presence of particular talents?
 - (i) Are divergent thinking scores adequate predictors of creative productivity?
 - (ii) Does the coexistence of high IQ and high divergent thinking produce performers who differ from those who score high on one or the other, but not both?

4. Standards for Determining Giftedness/Talent

No matter in which fields of endeavour outstanding performance is agreed upon as warranting the designation 'talent', decisions regarding what constitutes 'outstandingness' must still be made. There are currently few areas in which the evidence supports a particular cut-off point on some assessment instrument as generally predictive of high-level performance. Where reliable and valid measuring instruments exist, designation of giftedness has generally involved some percentage of the assessed population. In areas which depend more on judgement, there are few guidelines for setting standards. Furthermore, in the light of the varied cultural backgrounds and learning opportunities which characterise the population of both the United States and Australia, issues arise regarding the use of single versus multiple standards for determining giftedness/talent.

- a. What guidelines might be developed to determine the dimensions of the talent pool?
- b. Should some reasonable percentages be decided upon? How might they be determined?
 - (i) Would they differ from one area of talent to another?
 - (ii) Could such percentages be validated against later achievements?
 - (iii) Should percentages be calculated on a local, State or national level?
- c. Should different standards be used for including advantaged versus disadvantaged students?
 - (i) What are the social and political implications of multiple standards? When does the use of multiple standards become tantamount to a 'quota system'?
 - (ii) What evidence might be gathered to assess the short and longer term outcomes of special provisions for students from disadvantaged backgrounds admitted to special programs on the basis of lower or different standards than those used for the more advantaged?
 - (iii) Are there some areas of endeavour in which the chances of evidencing potential talent are minimally affected by socio-economic or ethnic factors?

5. Criteria for Selection - Potential versus Achievement

While there are no means of assessing potential ability in the absence of some form of learning-dependent performance, some measures are more directly affected by specific prior instruction than others. The practice of assessing achievement frequently fails to identify the 'gifted underachiever' as well as the talented student who has lacked opportunities to learn requisite skills, as in playing a musical instrument.

- a. In which areas can aptitude measures provide reliable evidence of talent potential in the absence of developed performance?
- b. How might teachers and other school personnel be alerted to signs of potential talent in the absence of high-level performance?
- c. Where aptitude measures are available, what are the advantages and disadvantages of using such measures in lieu of achievement?
- d. Where identification of talent depends largely on judgements of actual performance, what safeguards might be introduced to insure that stylistic biases on the part of the selectors do not militate against students with individually idiosyncratic or culturally divergent forms of performance?

6. Criteria for Judging the Effectiveness of Programs

Three criteria have been suggested for judging whether programs specially designed for gifted/talented students are appropriate: i) Does the program provide learning opportunities not available in regular schools and classrooms? ii) How well does the nature of the program match the characteristics of the particular talent area it is intended to serve and the characteristics of the learners which led to their identification as talented? iii) Is the program sufficiently flexible to accommodate individual differences in learning styles, motivations and interests of the students involved? The several meanings of enrichment and acceleration and the controversies surrounding these practices were explored in relation to the 'open' or 'closed' nature of various talent areas. A view of acceleration was proposed which focuses on the conceptual, creative and/or skill levels at which talented students are required to perform rather than on some measure of the intrinsic difficulty of the content with which they deal.

- a. What procedures might be used to reach consensus on criteria for judging appropriateness of programs and how might these be applied?

- (i) Would the same set of criteria be useful for judging programs in all talent areas?
- (ii) How and by whom should programs be assessed to insure that they meet agreed upon criteria?
- b. How might the allocation of resources be tied to evaluation of adequacy?
- c. How might program planning best accommodate the range of motivations, interests and learning styles of gifted/talented pupils?
 - (i) Should the assessment of individual motivations and learning styles become a standard part of the identification of gifted students?
 - (ii) How might materials development take such differences into account?
 - (iii) How might greater flexibility be built into school programming to allow for a variety of approaches within a field of study?
- d. Where students are admitted to special programs on the basis of high general intelligence, how might their relative academic strengths and weaknesses be accommodated?
- e. What evidence might be gathered to test the validity of admitting high achievers to gifted programs who fail to meet the test criteria?

7. Organisational Alternatives for Content Development

In the light of the importance of providing appropriate content and the difficulties teachers have in developing such content (especially in the 'open' disciplines), there is a need to consider ways of institutionalising program development efforts.

- a. What kinds of facilitative structures might be devised?
 - (i) Should these be regionally, State or Federally organised?
 - (ii) Would a series of 'institutes' devoted to program development in each talent area be preferable to a single structure which would use the services of specialised personnel in the several talent areas while maintaining a permanent cadre of educators responsible for the entire enterprise?

- (iii) How might such efforts be funded?
 - (iv) How might the products of such working groups be made available to schools and teachers?
- b. Should the functions of such content-development also include training teachers in the use of new units, materials or procedures?

8. *Organisation for Instruction*

Consideration of the administrative organisation of programs for the gifted/talented - special schools, special classes, individualised or small group in-class programs, out-of-school classes, etc. - has generally had priority over consideration of the content within any particular organisational pattern. In addition much of the controversy around special provision for gifted/talented students has focused on organisational issues, especially on various forms of ability grouping. Some criteria for selecting particular organisational modes in the light of the content to be delivered, available resources and community attitudes were suggested. A variety of possible administrative patterns was listed and issues related to meshing special and regular school programs were raised.

- a. How might various alternative organisational patterns be analysed and the assumptions underlying them be made explicit?
- b. What kinds of field-experimental studies might be mounted to assess the 'fit' between organisational pattern and learning objectives?
 - (i) Do some content areas require particular organisational modes while others can be accommodated in a variety of organisational structures?
 - (ii) What are the costs and the benefits of different organisational patterns as they affect resource allocation, on the one hand, and learning, creativity, attitudes and psychological development, on the other?
- c. How can special programs (where they exist within comprehensive schools) be meshed with the regular program of the school?
 - (i) How can continuity of special programs (especially where accelerated coverage is involved) across grades and from one school level to another (elementary to junior high, etc.) be assured?

- (ii) How might learnings in out-of-school programs be considered in modifying in-school programs for gifted/talented?

9. Staffing Programs for the Gifted/Talented

The age old issue of 'who should teach the talented' has thus far not been resolved. Much more needs to be learned about the characteristics (knowledge, teaching styles, attitudes) of effective teachers of the talented. But, even more important is the identification of those characteristics, if any, which distinguish the successful teacher of the gifted/talented from the successful teacher of the generality, since 'good' teachers are needed at all levels of ability. The use of out-of-school specialists to work with gifted learners was seen as only a partial solution to teacher allocation problems. Further, the problems of program instability resulting from teacher mobility were discussed with special emphasis on the Australian patterns of shifting senior teachers to more 'desirable' posts in order to achieve placement equity. Issues of teacher preparation and certification were also presented.

- a. How might the question of 'who should teach the talented' be reformulated to lead to more productive research?
 - (i) Is special competence in teaching gifted learners more a function of subject matter knowledge, attitudes toward educating the the gifted or special training?
 - (ii) Are the desirable characteristics the same at all age levels and in all talent areas?
- b. How can out-of-school specialists be recruited to work with talented students?
 - (i) What qualifications should they have?
 - (ii) How (out of what funds) should their services be remunerated?
 - (iii) How might such specialists collaborate with regular teachers in program planning, special tutorials, in-school and out-of-school classes, etc.?
- c. Might more effective use be made of the personnel of educative agencies outside the school to supplement instruction provided by regular teachers?
- d. What provisions might be made to insure program stability in the face of changing personnel?
 - (i) What procedures might be used to decrease the mobility of teachers responsible for programs for the gifted/talented?

- e. Should special courses for teaching gifted/talented be required (pre-service or in-service)?

(1) What might be the content of such courses?
Are there some common learnings appropriate for all who teach the gifted, or should content be specific to each of the specific talent areas?

- f. Should some special certification be required for eligibility to teach gifted/talented as is currently the case for other fields of exceptionality?

All of the scores of questions raised in this summary are candidates for exploration and research. But which of them, if any, can be most profitably approached on a cross-national level would need to be determined by a group of concerned specialists from both countries. Perhaps the selection of one or two of the possible questions for a pilot cross-national effort would determine the feasibility and profit of further collaborative work.

BIBLIOGRAPHY

- ABRAHAMSON, D. 'The effectiveness of grouping for students of high ability'. *Educational research bulletin*, 1959 (38) : 169-182.
- THE ADVOCATE SURVEY : A survey of experts in the education of gifted children. Silver Springs, Md. : Operations Research, 1971.
- AUSTRALIAN EDUCATION COUNCIL. The education of gifted children in Australia, 1977 (mimeo).
- BEREITER, C.E. 'SMPY in social perspective'. In D.P. Keating (ed.), *Intellectual talent : Research and development*. Baltimore, Md. : Johns Hopkins University Press, 1976.
- BESTOR, A.E. *Educational wastelands*. Urbana, Ill. : University of Illinois Press, 1953.
- BISHOP, W.E. 'Successful teachers of the gifted'. *Exceptional children*, 1968 (34) 317-325.
- BRONFENBRENNER, U. 'Socialisation and social class through time and space'. In E.E. Macoby, T. Newcomb, and E.L. Hartley, *Readings in social psychology*. New York : Holt, 1958.
- CLARK, K.B. 'The most valuable hidden resource'. *College board review*, 1956 (29): 23-26.
- COHN, S.J. 'A strategy for a pluralistic view of giftedness and talent'. Baltimore, Md. : Johns Hopkins University (mimeo, undated).
- CONANT, J.B. *The American high school today*. New York : McGraw-Hill, 1959.
- COOK, J.S. and COONEY, G.H. 'The scaling of marks at the Higher School Certificate Examination', July 1976 (mimeo).
- COX, C.M. *The early mental traits of three hundred geniuses. Genetic studies of genius*, Vol. 2. Stanford, Cal. : Stanford University Press, 1926.
- DAVIS, A. and EELLS, K. *Davis-Eells test of general intelligence or problem solving ability*, Primary (Grades 1-2), Intermediate (Grades 3-6). New York : Harcourt, Brace & World, 1953.
- DONALDSON, R.R. *Science for the academically talented student in the secondary school*. Washington, D.C. : National Education Association, 1959.

- DONIVAN, J.W. *Stability of career choices of talented youth*. Evanston, Ill. : National Merit Scholarship Corp., 1968.
- FINDLEY, W.G. and BRYAN, M.M. *Ability grouping : 1970-III*. The problems and utilities involved in the use of tests for grouping children with limited backgrounds, and alternative strategies to such grouping, Washington, D.C. : Office of Education, 1970.
- FOX, H.H. 'A critique on creativity in science'. In M.A. Coler (ed.), *Essays on creativity in the sciences*. New York : New York University Press, 1963.
- FOX, L.H. 'Sex differences in mathematical precocity : Bridging the gap'. In D.P. Keating (ed.), *Intellectual talent : Research and development*. Baltimore, Md. : Johns Hopkins University Press, 1976.
- FUND FOR THE ADVANCEMENT OF EDUCATION. *They went to college early*. Evaluation Report No.2. New York : Fund for the Advancement of Education, 1957.
- GALLAGHER, J.J. 'Issues in education for the gifted'. In A.H. Passow (ed.), *The gifted and the talented : Their education and development*. 78th Yearbook of the National Society for the Study of Education. Chicago : University of Chicago Press, 1979.
- GALLAGHER, J.J. 'Technical assistance : A new device for quality educational services for the gifted'. *TAG Newsletter*, 1974, (16).
- GARDNER, J. *Excellence : Can we be equal and excellent too?* New York : Harper & Row, 1961.
- GEORGE, W.C. and DENHAM, S.A. 'Curriculum experimentation for the mathematically talented'. In D.P. Keating (ed.), *Intellectual talent : Research and development*. Baltimore, Md. : Johns Hopkins University Press, 1976.
- GOLD, M (arvin) J. 'Teachers and mentors'. In A.H. Passow (ed.), *The gifted and the talented : Their education and development*. 78th Yearbook of the National Society for the Study of Education. Chicago : Chicago University Press, 1979.
- GOLD, M(ilton) J. 'Special programs for the able. Some illustrative programs. Conclusions'. In A.H. Passow (ed.), *The gifted and the talented : Their education and development*. 78th Yearbook of the National Society for the Study of Education. Chicago : University of Chicago Press, 1979.

- GOLDBERG, M.L. *Research on the talented*. New York : Teachers College Press, 1965.
- GOLDBERG, M.L., PASSOW, A.H. and JUSTMAN, J. *Effects of ability group*. New York : Teachers College Press, 1966.
- GUILFORD, J.P. 'Potentiality for creativity and its measurement'. In A. Anastasi (ed.), *Testing problems in perspective*. Washington, D.C. : American Council on Education, 1966.
- HARTSHORN, W.C. *Musio for the academioally talented student in the secondary school*. Washington, D.C., National Education Association, 1960.
- HENRY, N.B. (ed.) *The education of the gifted*. 57th Yearbook of the National Society for the Study of Education. Chicago : University of Chicago Press, 1958.
- HENRY, T.S. *Classroom problems in the education of the gifted*. 19th Yearbook, Part II, of the National Society for the Study of Education. Chicago : University of Chicago Press, 1920.
- HLAVATY, J.H. (ed.) *Mathematics for the academioally talented student in the secondary school*. Washington, D.C. : National Education Association, 1959.
- HOLLINGWORTH, L.S. *Children above 180 IQ, Stanford-Binet*. Yonkers-on-Hudson, N.Y. : World Book Co., 1942.
- JACKSON, D.M. 'The emerging national and state concern'. In A.H. Passow (ed.), *The gifted and the talented : Their education and development*. 78th Yearbook of the National Society for the Study of Education. Chicago : University of Chicago Press, 1979.
- JEWETT, A. (ed.) *English for the academioally talented student in the secondary school*. Washington, D.C. : National Education Association, 1960.
- KEATING, D.P. 'Secondary school programs'. In A.H. Passow (ed.), *The gifted and the talented : Their education and development*. 78th Yearbook of the National Society for the Study of Education. Chicago : University of Chicago Press, 1979.
- KLEIN, M.M. *Social studies for the academioally talented student in the secondary school*. Washington, D.C. : National Education Association, 1960.
- LEE, G. (ed.) *Crusade against ignorance : Thomas Jefferson on education*. New York : Teachers College Press, 1961.

- LEHAMN, H.C. *Age and achievement*. Princeton, N.J. : Princeton University Press, 1953.
- LORGE, I. and BLAU, R.D. 'Education of a genius'. *School and society*, 1941 (54) : 573-575.
- MARLAND, S.P., Jr. *Education of the gifted and talented*, Vol. I. Report to the Congress of the United States by the U.S. Commissioner of Education. Washington, D.C. : U.S. Government Printing Office, 1972.
- McGINN, P.V. 'Verbally gifted youth : Selection and description'. In D.P. Keating (ed.), *Intellectual talent : Research and development*. Baltimore, Md. : Johns Hopkins University Press, 1976.
- McKINNON, D.W. 'The nature and nurture of creative talent'. *American psychologist*, 1962 (17) : 484-495.
- MAISTER, M. 'Special high schools'. Section in L.S. Michael and Contributors, Secondary school programs. In N.B. Henry (ed.), *Education for the gifted*. 57th Yearbook of the National Society for the Study of Education, Part II. Chicago : University of Chicago Press, 1958.
- MILLER, D.R. and SWANSON, G.E. *Inner conflict and defence*. New York : Holt, 1960.
- NATIONAL EDUCATION ASSOCIATION. 'What's new in the schools?' *Research bulletin*, Washington, D.C., 1960a.
- NATIONAL EDUCATION ASSOCIATION. *Administrative procedures and school practices for the academically talented student*. Washington, D.C. 1960b.
- NATIONAL LEADERSHIP TRAINING INSTITUTE. Masters and Ph.D. programs in gifted education or with emphasis in gifted education. *N/S-LTI Bulletin*, 1976 (3).
- NEWLAND, T.E. *The gifted in socio-educational perspective*. Englewood Cliffs, N.J. : Prentice Hall, 1976.
- ODEN, M. 'The fulfilment of promise. Forty year follow-up of the Terman gifted group'. *Genetic psychology monograph*, 1968 (77) : 9-93.
- OHIO COMMISSION ON CHILDREN AND YOUTH. *The status of the gifted in Ohio*. Columbus, Ohio: Department of Education, 1951.
- PALLET, A.T.G. 'Early freshman entrants at the University of Chicago'. *School and society*, 1972 (8) : 28.

- PASSOW, A.H. (ed.) *The gifted and the talented : Their education and development*. 78th Yearbook of the National Society for the Study of Education. Chicago : University of Chicago Press, 1979.
- PASSOW, A.H., GOLDBERG, M.L., TANNENBAUM, A.J. and FRENCH, W. *Planning for talented youth. Considerations for public schools*. New York : Teachers College Press, 1955.
- PRESSEY, S.L. 'Educational acceleration : Occasional procedure or major issue'. *Personnel and guidance journal*, 1962 (41) : 12-17.
- RENZULLI, J.S. *New directions in creativity*. New York : Harper & Row, 1973.
- ROBINSON, H.B., ROEDEL, W.C. and JACKSON, N.E. 'Early identification and intervention'. In A.H. Passow (ed.), *The gifted and the talented : Their education and development*. 78th Yearbook of the National Society for the Study of Education. Chicago : University of Chicago Press, 1979.
- ROSENBLUM, S., KELLER, J.E. and PAPANIA, N. 'Davis-Eells ("Culture Fair") test performance of lower class retarded children'. *Journal of consulting psychology*, 1955 (19) : 51-54.
- SEASHORE, C.E. *Seashore measures of musical talents*. New York : Psychological Corporation, 1939.
- SEARS, P.S. 'The Terman genetic studies of genius, 1922-1972'. In A.H. Passow (ed.), *The gifted and the talented : Their education and development*. 78th Yearbook of the National Society for the Study of Education. Chicago : University of Chicago Press, 1979.
- SHANNON, D. 'What research says about education'. *Phi delta kappan*, 1957 (22) : 70-72.
- STANLEY, J.C. 'Rationale of the Study of Mathematically Precocious Youth (SMPY) during its first five years of promoting educational acceleration'. In J.C. Stanley, W.C. George and C.H. Solano (eds.), *The gifted and the creative : A fifty year perspective*. Baltimore, Md. : Johns Hopkins University Press, 1977.
- STANLEY, J.C. 'Youths who reason extremely well mathematically : SMPY's accelerative growth'. *Gifted child quarterly*, 1976a (20) : 237-238.

- STANLEY, J.C. 'Special fast mathematics classes taught by college professors to fourth through twelfth graders'. In D.P. Keating (ed.), *Intellectual talent : Research and development*. Baltimore, Md. : Johns Hopkins University Press, 1976b.
- TANNENBAUM, A.J. 'Pre-Sputnik to post Watergate concern about the gifted'. In A.H. Passow (ed.), *The gifted and the talented : Their education and development*. 78th Yearbook of the National Society for the Study of Education. Chicago : University of Chicago Press, 1979.
- TANNOCK, P.D. Education policy in the United States and Australia : A proposal for bi-lateral research and consultation, 1977 (mimeo).
- TATE, M.W. and VOSS, C.E. 'A study of the David-Eells tests of intelligence'. *Harvard educational review*, 1956 (26) : 374-387.
- TERMAN, L.M. *Mental and physical traits of a thousand gifted children*. *Genetic Studies of Genius*, Vol. I. Stanford, Cal. : Stanford University Press, 1925.
- TERMAN, L.M. and ODEN, M.H. *The gifted group at mid-life : Thirty-five years' follow-up of the superior child*. *Genetic studies of genius*, Vol. V. Stanford, Cal. : Stanford University Press, 1959.
- THELEN, H.A. *Classroom grouping for teachability*. New York : John Wiley & Sons, 1967.
- TONGUE, C. and SPERLING, C. 'Gifted and talented : An identification model'. Raleigh, N.C. : Division for Exceptional Children, State Department of Public Instruction, 1976 (mimeo).
- TORRANCE, E.P. 'Unique needs of the creative child and adult'. In A.H. Passow (ed.), *The gifted and the talented : Their education and development*. 78th Yearbook of the National Society for the Study of Education. Chicago : University of Chicago Press, 1979.
- TORRANCE, E.P. 'Creatively gifted and disadvantaged gifted students'. In J.C. Stanley, W.C. George and C.H. Solano (eds.), *The gifted and the creative : A fifty year perspective*. Baltimore Md. : Johns Hopkins University Press, 1977.
- TORRANCE, E.P. 'Current research on the nature of creative talent'. *Journal of counselling psychology*, 1959 (6) : 309-316.

- TUMIN, M. 'The process of integration'. In G. Klopff and A. Lestor (eds.), *Integrating the urban school*. New York : Teachers College Press, 1963.
- WARD, V.S. 'The Governor's school of North Carolina'. In A.H. Passow (ed.), *The gifted and the talented : Their education and development*. 78th Yearbook of the National Society for the Study of Education. Chicago : University of Chicago Press, 1979.
- WHIPPLE, G.M. *The education of the gifted*. 23rd Yearbook of the National Society for the Study of Education. Chicago : University of Chicago Press, 1924.
- WHITLOCK, B.W. 'Simon's rock : The early college'. *Community and junior college journal*, 1974 (44) : 18-20.
- WITTY, P.A. (ed.) *The gifted child*. Boston : D.C. Heath & Co., 1951.
- WITTY, P. and THEMAN, V. 'A follow-up study of exceptional attainment of gifted Negroes'. *Journal of educational psychology*, 1943, (34) : 35-45.
- WOLFLE, D. *American resources of specialised talent*. New York : Harper & Row, 1954.
- ZETTEL, J. 'State provisions for educating the gifted and talented'. In A.H. Passow (ed.), *The gifted and the talented : Their education and development*. 78th Yearbook of the National Society for the Study of Education. Chicago : University of Chicago Press, 1979.
- ZIEGFELD, E. (ed.) *Art for the academically talented student in the secondary school*. Washington, D.C. : National Education Association, 1961.
- ZIMMERMAN, I. and WOO-SAM, J. 'The utility of the Wechsler Preschool and Primary Scale of Intelligence in the public school'. *Journal of clinical psychology*, 1970 (26) : 472.